delight in architecture

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By

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content

abstract

This project explores delight in buildings and how we experience them. It states that the personality of a building as exhibited in individual traits is what we find delight in, as humans tend to personify things they interact with. It further argues that through the complexity of traits and their interactions there is the potential for continued discovery and delight. The project is located in Chicago Illinois and will be a transit hub including an 'L' stop, commuter rail terminus and a high speed intercity rail system.

statement of intent

problem statement

What enables a building to incite delight, excitement and curiosity even after an individual's familiarity with the building has been established?

statement of intent

typology
High Speed Rail & 'L' Station

claim
Continued delight in a building result from its overall personality---as such, buildings need to be developed as personalities with the overall being greater than the individual personality trait.

premises

There must be a "give and take" between different aspects of design.

The building's design in its entirety (as a personality) is more important than the design of specific aspects (traits). This whole is a manifestation of the connections, interplay, and unique strengths of the individual trait.

Relationships with people with personalities we like to associate with grow over time as we discover the order behind complexities in their personality. With good design, it is the same way. Good designs have enough nuance and complexity to maintain intrest and the possibility of continued discovery and enough order and pattern to be understood. Humanity derives joy from discovery, and grows in appreciation of a thing or person from increased knowledge of it.

theoretical premises
The overall personality of a building is what enables an individual to delight in its spaces despite familiarity. While the personality traits of a building are important in and of themselves, no individual trait should be held in higher regard than the expression of the whole.

justification
A persons environment should always intrigue, amuse, inspire, and delight--even in the most mundane of situations such as daily commute or other mass transport. High speed rail also offers a unique opportunity to revolutionize the movement of the nation while dramatically reducing emissions and increasing economic activity.

proposal

narrative

What enables a building to incite delight and excitement even after an individual's familiarity with the building is established? Continued delight in a building results from the discovery of a building's personality. Buildings need to be developed as personalities, with the overall expression being greater than the just the collective amalgamation of personality traits. Architects carefully develop different aspects of a building: how they react with light, time, or seasons; materiality, space planning, metaphor, experience, functionality, emotion, tectonics, 'cleverness', etc... In such a multi-faceted problem it must be understood that the whole is more important than the "pure" manifestation of any one aspect. Of course, each aspect must be explored and developed into its greatest potential as a contribution to this whole personality of a building, but these explorations should never compromise the personality of the building as a whole.

Great buildings draw you into and through them, they arouse curiosity and engage the senses to delight, they serve perfectly, anticipating needs of their patrons. Most importantly, you never can grow weary of them, they never disappoint, they never annoy. Instead, they grow in your esteem, becoming almost like a dear friend always delighting in a different way. Development of a building's personality is essential to its success as a functioning, delightful building. Buildings designed as "long time friends" should inherently become a delight to us as their patrons. People should find joy, wonder, and excitement in their day to day lives, even in what could be considered the mundane. Your curiosity should never cease being piqued. The built environment should enhance the lives it serves instead of merely being the "thing in which stuff happens", it should help us "be human" and enrich our lives.

Individual elements of a design rarely "get their way" all the time. Pure, perfect manifestation of one concept or system is at the expense of other important aspects of the design. For example, a design focusing only on metaphor will easily become unbuildable either financial or feasibility reasons. A design that looks to the expression of structure above all else can lead to thermal bridging, and therefore energy, condensation, and mold issues. A design looking to be efficient in cost and space may lose expression and therefore its joy in being. There must be compromises for the sake of the whole building--shifts in mechanical systems, space arrangements shifted slightly from where they want to be--but this works toward the positive. These small shifts and tweaks are for greater coherence, grace, and unity of the whole, and often result in serendipitous moments. These moments add to the delight of a building rather than detract from it, like quirks in a personality.

The building results as a manifestation not only of its individual traits, but is also a synthesis of them. The whole is greater than the sum of the parts. This complex array of different aspects and how they interact with and react to each other becomes what we as users or "friends" of the building find joy in. The new discovery of different personality traits of the building through time serves to make us continually more curious, which thereby makes us excited and delighted when we learn more about the building.

Design focused on just one aspect, while it may create a stunning first impression, cannot maintain this excitement through time. It becomes a "one trick pony" that after familiarity is established, loses the wow and becomes wearisome.

Buildings as an entire composition need to engage their patrons as if in a conversation, or as in many conversations over time. It should regularly reveal more of its personality to you. Through specific moments of a building it teaches you about itself and learns about you.

In general, one does not expect to find delight in mass transit. As a mode of transportation it is viewed as the most utilitarian and cost conscious way to travel. Perhaps if it became a wonderful opportunity for discovery, chance meetings, and joy.

Truly wonderful buildings spark curiosity, encourage discovery, and create enjoyment for people they serve, and are unique in the way they do this. The great buildings can do this because they are personalities, with differing traits, strengths, and even shortcomings. The expression and interplay of those traits gives buildings their distinct personalities. As a designer, imbuing a building with personality can turn an experience that is usually considered a nuisance into a pleasant experience. Daily commute and travel to and from destinations are two often very annoying tasks for many people. A high speed train station will be better as a friendly greeting than the building to pass through to get to work or a meeting. High speed rail is also poised to change the way North Americans travel mid range distances, and in the future will have a large impact on many aspects of out culture.

user/client description

The United States lags decades behind the rest of the developed world in efficient mass transit. High speed rail has the possibility to make quick travel between major metropolitan areas far less tedious, more energy efficient, and more cost effective while also solving part of the traffic issues in urban areas.

owner

The high speed rail station will be owned, maintained, and operated by the Transit Authority of Chicago as part of a national network of high speed rail stations.

users

Patrons of the Chicago Terminal will be travelers from all walk of life including business people, tourists, visitors, and other users of the rail system that are passing through the terminal. As the Terminal will be a major hub of the city as well servicing patrons of "the L", many of the users will be residents of the city of Chicago. The station will need to be easily accessible and usable for anyone with any disability.

The Terminal will be able to handle massive amounts of people, peaking at rush hour on days adjacent the weekend when business and tourist travel is also heavy. In Rome, Termini experiences over 480,00 passengers per day, or over 150 million passengers a year between the metro transit and rail stations(GrandiStazioni). Current total ridership of the Chicago Transit Authority's services is 513.5 million

While it is unlikely that numbers will initially be that large in an American city due to less established infrastructure, allowances for expansion will need to be made. Several large parking structures will need to be available for both long term and short term parking.

elements

platforms

The platforms are where passengers board and get off the train

restaurants

Cafes and restaurant at varying price points and convenience will be available to patrons,

waiting area

The lobby and waiting area will provide places for people to rest and wait for train arrivals.

ticket booths

Passengers will be able to purchase tickets and 'L' passes.

information

The Information booth will include a lost and found, transportation information, directions through the Terminal, information on delays, etc...

restrooms

the "L" station and Metra station

The Terminal will also be a connecting station for the 'L' connecting the airport, Terminal, and commuter transit lines.

small retail and services

security

offices

Offices for the Transit Authority employee responsible for operations of the station, including ticket sales managers, maintenance manager, and others

passenger pick-up (taxis, cars)

Buses, Taxis, and other vehicles will be able to access the building to pick up passengers.

first aid

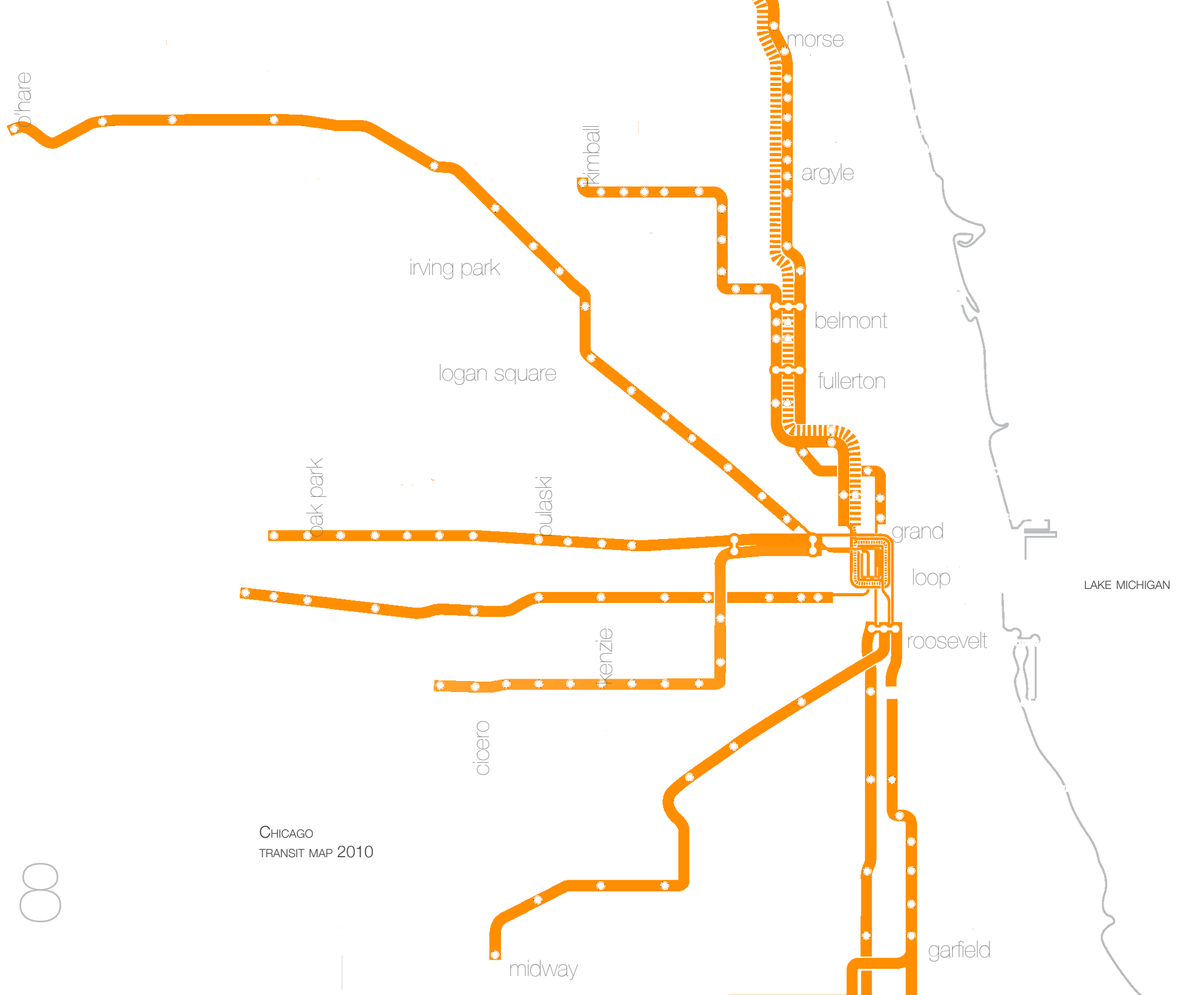
ticket buying kiosks

Automated ticket sales will be available for convenience

tourism office

The tourism office will offer tickets to major attractions in Chicago and the surrounding area as well as information regarding the city.

site information



CHICAGO
TRANSIT MAP 2010

site information

Since railroads gained prominence in the nineteenth century, Chicago has been a major center for rail travl. Its geographic location makes it an excellent candidate for a high speed rail hub now. The well-established use of the 'L' metro system will make the metro hub portion of the Terminal feasible and the location of other major metropolitan areas such as Minneapolis-St. Paul, Milwaukee, Cincinnati, Louisville, and St. Louis supports the logic of high speed rail at those distances--an inconvenient drive, but not worth the cost of flight.

502 West Randolph Street
West Loop
Chicago, Illinois

Demographics (within one mile)

Daytime Employees | 482,477
Residential Population | 41,057
Households | 23,818
Average Family Household Income | $141,496
Undergraduate Degree or Higher | 61%
Households Without Cars | 30%
Walk to Work | 35%
Public Transit to Work | 22%

Residential

Residential Developed Units | 22,598
Residential Proposed Units | 7,935
West Loop & River West River North | 7,935
Chicago Downtown Developed Units | 60,766
Chicago Downtown Proposed Units | 22,915

Local Workforce

Services | 205,967
Financial-Insurance-Real estate | 96,087
Retail | 41,230
Manufacturing | 27,599
Transportation,
Communication/Public Utilities | 27,670
Wholesale Trade | 8,037
Construction | 5,243
Agriculture/Mining | 1,053
Government | 69,591

Office (million square feet)

Total Downtown Office Space | 131.6
Existing West Loop Office Space | 45.2
Under Construction | 5.0
Proposed MetraMarket Office Space | 11.8

Commuters

Daily Metra Commuters at OTC | 105,000
Daily Metra Commuters at Union Station | 122,000
Average Daily (Monday — Friday) CTA Green Line passengers at Lake & Clinton | 3,571

Sources: Appraisal Research Counselors, Claritas, Costar, CTA and Metra as of 5/2008.

emphasis

Understanding buildings as personalities and how people derive joy from those personalities will be central to this thesis. Interacting with the environment automatically triggers some sort of emotional response in humans, much like interacting with people. All metaphor and conceptual understanding must ultimately involves human experience, and therefore a personality or personification of building elements

plan for proceeding

Research Direction

Research areas will include the Theoretical Premise, Sociology, High Speed Rail Systems, Terminals, Site & Typology History, Site Analysis, and Programming.

Design Methodology

Design Methodology will include quantitative & qualitative analysis, graphic analysis, 3D analysis, & Systems Analysis. Research will follow a Concurrent Transformative Strategy to support these analysis. Statistical Data will be gathered through archival & demographic research and gathered data at site visit. Qualitative data will be gathered by site visit, and archival and periodical research.

Documentation of Design Process

Documentation will be compiled digitally through journalling and drawing scans. Backups of the documentation will be made biweekly. It will be available through the digital commons for other scholars, and will be presented in the thesis book. Data will be collected and reviewed biweekly, and at the conclusion of major project milestones.

program

research results & implications for theoretical premise

The overall personality of a building is what enables an individual to delight in its spaces despite familiarity. While the personality traits of a building are important in and of themselves, no individual trait should be held in higher regard than the expression of the whole.

delight

We as a culture understand delight to be a generally positive emotion, exceeding a general state of contentment or happiness as the English language understands it. Delight as a specific emotion or state of being for a person is difficult to pinpoint due to differences in culture and in psychological researchers purpose in defining it. As of late, discussions on delight in the psychological community have moved beyond the walls of academia into the world as applied to service industries, the quickest growing sector of the economy in most developed nations. The business world is quickly realizing, or at least revisiting after many years of ignoring, the notion that consumer delight equals increased brand loyalty, free marketing through word of mouth, and increased profits (Oliver, Rust, & Varki 1997). With Economics as the driver for such discussions, action (such as increased consumption) inspired by emotions has become the goal of much of the research relating to delight. The benefit of this is that there has at least been research applied to real world or non-hypothetical situations and has been proven conceptually accurate (Oliver, Rust, & Varki 1997). The difficulty is in separating what causes real delight with no expectation of resultant action, and what causes delight to induce action.

Definitions of delight in psychology are varying but direct. Wierzbicka (1992) defines emotion concepts such as delight by a series of thought processes:

Delighted
X feels something
sometimes a person thinks like this:
something good happened now
I didn't know: this will happen
because of this; this person
feels something good
X feels this (pg 238)

She uses the words “good”, “didn’t know”, and “feels” to specifically describe the emotion in a non-culture-specific way. What we can deduce that, by her definition, delight results from a good thing happening, the surprise at this event happening, and the positive emotion associated with the “good” outcome and surprise at the event. With this definition we have a positive outcome with surprise.

James Russell (2003) proposes another model for the definition of emotion concepts that defines emotional states not by the names that our culture has given them but by their varying levels of displeasure versus pleasure and activation versus deactivation (fig. 1, Russel, 2003). According to this model delight would fall near the gold dot, or result from a combination of high pleasure and high activation (Oliver, Rust, & Varki 1997). This model more accurately explains specific emotions related to one another on related continua, giving us what could be considered emotions with high saturation or with low saturation if you were to relate the continua to that of color. The result is our understanding of delight as a high saturation emotion.

These definitions for me do not fully explain delight as it relates to an experience of space, or as I have experienced it as an emotion personally. Both of the accepted approaches

toward emotions are highly structural--understandably so because of the difficulties of communicating the nuances of human emotion across cultures and languages--this does not necessarily mean that the definitions are incorrect, but merely incomplete. This approach restricts both methods of definition to emotions in their most general form, instead of

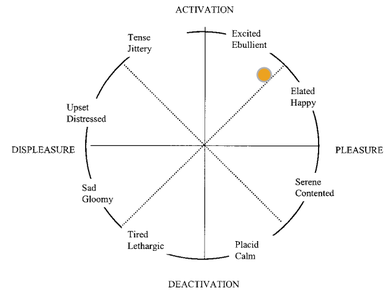


Figure 1. Core affect.

how it applies to specific situations or emotions that relate to real world experience. The emotion of delight on aceing a test is different than the emotion of delight upon entering Union Station’s great hall, both of which are different from the emotion of delight resulting in the experience of a loon call on a purple misty morning while sipping a warm cup of coffee at the end of a dock in the North Woods. The structuralist approaches do not allow the possibly infinite number of variables which real world emotional responses are subject to, and are therefore inherently flawed as a method of describing actual emotion.

What these approaches do allow for is a base point for discussion of conceptual emotion. For the development of the design an understanding of delight more closely relating to Russel’s model will be used as guidance in the understanding of action in, reactions to, and interactions with space. The understanding of delight as relating to this project will however be necessarily adapted for the inclusion of other variables, for example allowing the possibility of delight with a high level of pleasure and a lower level of activation. The constant will however remain a high level of pleasure with a minimum of one other variable (such as surprise, high activation, or awe) as it is the constant between the two researched definition models (Wierzbicka 1992, & Russell 2003). This adaptation will allow the understanding of delight as situational while allowing it to be discussed in real form as opposed to conceptual form.

delight, in real experience

Delight as this design will hope to achieve it is most closely described by the following statement by Michael Benedikt (1987, pg 4):

There are valued times in almost everyone’s experience when the world is perceived afresh . . . At these times our perceptions are not at all sentimental. They are . . . suffused with an unreasoned joy at the simple correspondence

of appearance and reality, at the evident rightness of things as they are.

This view of delight assumes that there is no formula of reactions that necessarily leads to delight. It assumes that moments of delight are simply out there to discover, or even be created in ones own mind. To achieve this sort of delight, all that is required is a moment of curiosity, loveliness, awe, or appreciation. It is an approach that leans more to a existential or phenomenological understanding of how we experience and react to the world. All delight has to do and all that it has to be is delightful.

This is not to say that delight will be universally perceived. It will be there, waiting for discovery, but it is impossible to absolutely force a person to experience delight. It is more so possible to make such an experience likely enough to be a common experience among many. The person must be willing to experience things and take delight in them. Leeper & Madison state: "the objective of having as deep an ***appreciative experiencing*** of life situations as possible; second, the objective of making ***constructive contributions*** that will be as valuable as he can make them." (Leeper & Madison 1959) The design becomes something that is there to be experienced by all, and not a code to break or hidden meaning to perceive, but it is an honest expression. It is not for the "chosen" but for those who choose to experience it.

personality, personality traits, and gestalt

The theoretical premise of this thesis depends on the assumption that humans delight in interacting with one another, or at least in having the opportunity to do so. Additionally it will demonstrate that personification of non-human entities is a major way in which humanity understands the world poetically. Following these two statements is that through our understanding of the world poetically through personification we are able to delight in our world. This is not to say that we delight in experiences because they are personifications, it is that we make sense of our delight through personification. The compounding of these experiences begins to give an entity personality traits, and then a developed personality that we assign it through remembered experience. For example, there is a coffee shop that a person stops at every morning. They notice the peeling green paint on the chairs, and delight in it. The next day, a generous awning provides greatly appreciated protection from a downpour. The day after that, a large window lets in a peculiar and intriguing color of light, the person notices and delights in it. The next day, the person is pinched by a crack in the counter, and is displeased. The next day the person notices a mother and child discussing the strengths of cinnamon rolls versus Danish pastries. Over time, these cumulative experiences--mostly, but not entirely delightful--coalesce into the personality of the coffee shop. Essentially, the person and the coffee shop become friends. One day many years later, the shop closes, and the person feels sadness and grief, as would likely happen at the end of any other relationship.

"All of us have to be psychologists, at least in one sense of the word, because all of us are deeply interested in matters of personality in ourselves and others." (Leeper & Madison 1959) Humans analyze others, trying to understand them and decide whether or not we wish to talk to them. "Our common thinking about personality, as we find it today, has been enormously enriched by contributions from many different sources-literature, philosophy, education, and religion, as well as various areas of practical experience. Our everyday thought contains many different strands, therefore, and takes many different forms in different persons." (Leeper & Madison 1959) Considering the amount of work we unconsciously go through to classify other people, according to their traits, it also makes sense that we do the same to buildings.

personality and metaphor

Human learning is very much based on direct experience, and metaphor of direct experience. For example, when a first grader in Florida asks, "what is snow?" someone will likely open a freezer to show the coldness and the ice crystals forming around certain foods or compare snowflakes to feathers floating, and to rain falling from clouds, or snowdrifts to sand dunes. Each of these things are "like" a different aspect of snow and the first grader now has a concept of the properties and appearance of snow through direct experience of certain similar elements and a comparison. "Through metaphor. . . one may apply the knowledge and interpretations already understood for the case of the named item of displacement.' (Antonaides 1992). Since metaphor must always relate to experience of a person it is impossible to separate personality from any metaphor used to describe design or an experience of a space. For example, a declared metaphor for a design may be "peeling an orange" but the true metaphor is "like a person peeling an orange" that person likely being the designer. If the designer is aware of the role personality plays in any metaphor driven design, the designer can conceivably pick and choose the personality traits for a design to exhibit.

Using metaphor as genesis for design simply allows for better understanding of the intent of the designer, and the expression he or she wishes to be expressed. Even if there is nothing in particular that the designer wishes to express the design takes on a meaning simply by being "for you cannot catch the world naked and without meaning" (Benedikt 1987). That we intend that a building should be gives it intent and the metaphor be default becomes the designer pouring select parts of their personality into the project--sometimes virtues like love for the sunrise and sometimes faults like selfishness as the expense of your neighbor (or their forest). The metaphor of a Friend as design delves into the question of what we as humans desire or need a true friend to be, or perhaps even more so what qualities we personally desire to have in a friend. What qualities that we specifically see as human can increase our delight in a design? "The critical acclaim given Aalto is nothing but an acceptance of the idea that we can produce buildings based on the intangible metaphor of humanity, perhaps the greatest of all metaphors." (Antonaides 1992)

interpersonal relationships

Interaction with other humans is a basic need. One of the most devastating punishments we can inflict on humans is to place them in solitary confinement (Dwyer 2000). Known to Psychologists as affiliation, this basic need for the company of others drives people out into the world in search of at the minimum, company. This need for interaction grows stronger in times of great gladness or great stress (Dwyer 2000). Increased interaction and mutual enjoyment and respect lead to friendships. Friendship is a "voluntary relationship with people whom we like. Friends help in times of need, trust and respect each other, and share confidences while respecting each other's privacy . . . friends as people who can be trusted to be loyal, kind, cooperative, and sensitive to the other's needs...being people who truly understand each other's strengths and weaknesses" (Dwyer 2000). This analysis of what friends are to a person is particularly useful when we begin to think of those traits applied to a building. A building that you form a strong relationship with will "help in times of need" will garner your "trust" and "respect" and respect your privacy. In a building that you frequent you will interact with it often, deepening the friendship (Hallinan 1978).

A situation, like a transit station, where a person is not always acquainted with the people around them can be a lonely experience despite the hundreds of people around them. In such instances the building that a person has formed a relationship with can provide comfort. It is certainly true that a relationship with a building can not replace real human interaction, but relating to the building in a way that is more like an interpersonal relationship as opposed to a person-object relationship will possibly make the process of transit and travel run more delightfully for many people.

interactivity

As aforementioned, relationships are formed through beneficial interaction and communication. Similarly, when "architectural space has true communicative ability, it can foster a heightened sense of attachment" (Fox & Kemp 2009). This "sense of attachment" is fostered when you feel the space understands you and your needs, similar to another person who understands your strengths and weaknesses. Many factors contribute to the need for such an experience of space from "the desire for solace or privacy, to invigoration or social interaction" (Fox & Kemp 2009).

At this point we can begin to draw a corollary from the interaction we need to form an attachment to space and the interaction we need from a friend. To "Share confidences while respecting each other's privacy" and "friends as people who can be trusted to be loyal, kind, cooperative, and sensitive. . .who truly understand each other" stands alongside "the desire for solace or privacy, to invigoration or social interaction" as nearly interchangeable for relationships from people or from the built environment and spaces. We also form strong positive memories from our relationships and experiences with friends, a corollary to " a point where we gain a special attachment to space based on our experience with that space" (Fox & Kemp 2009). Like a friend, "when the space understands and mediates the multitude of your desires and--often conflicting--needs, then you begin to understand a space by means of anthropomorphic metaphors such as supporting and understanding. You have an enhanced attachment to such a space" (Fox & Kemp 2000). With these corollaries in mind, it become easy to understand that when we positively interact with a space, it is natural for a person to imbue it with the qualities of a friend, for it responds in a similar way.

Interactivity in a constructed environment then becomes almost crucial to the experience of the space. Not just in the traditional sense that you twist a handle and a door opens or you touch a screen and your information is called up, but also in that a building responds to a view with an appropriately placed window or perhaps provides a curiosity where distraction from a long wait is desirable. Interaction can happen with static elements as easily as with dynamic ones. Cyclical responses to daylight or seasonal patterns also fall under the realm of interactivity because they respond to the desire of the occupants of a building to be best protected and open to the natural environment at the same time.

A place for interactive methods specifically intended to relay information exists as well. People seek affiliation for information gathering (Dwyer 2000) and the more traditional sense of interactivity of spaces allows for this as well. For example, if a person has three separate tickets for connecting trains, they could hold their tickets up to a place on the wall to get their overall schedule, how to get from one connection to another, the status of their baggage, whether the trains were running on time or not, and whether they were keeping up with their schedule. This would ease anxiety about a complex travel schedule and provide necessary information quickly, fostering appreciation for a space (easement of anxiety and information gathering being two of three reasons people seek affiliation in the first place) (Dwyer 2000).

research results from the typological research

case study 1
railway station
basel, switzerland

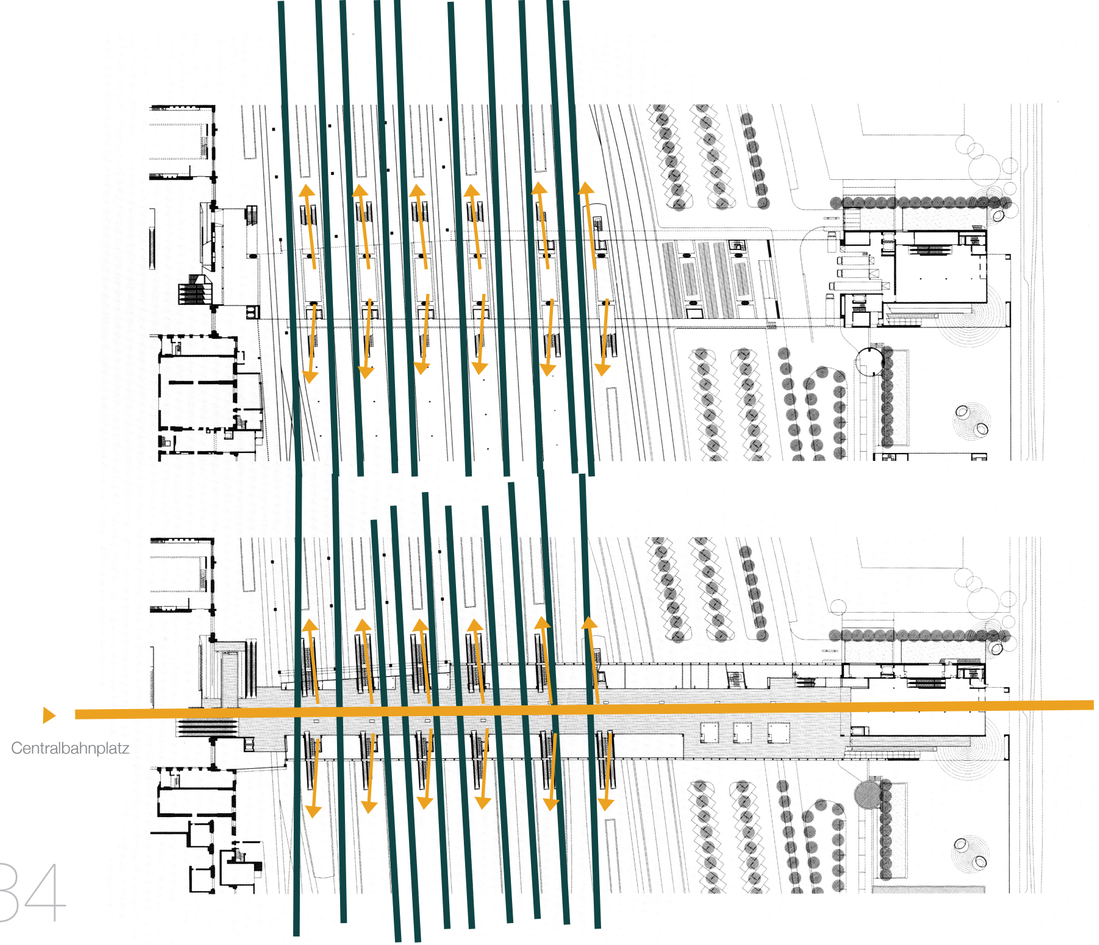
cruz y ortiz, seville

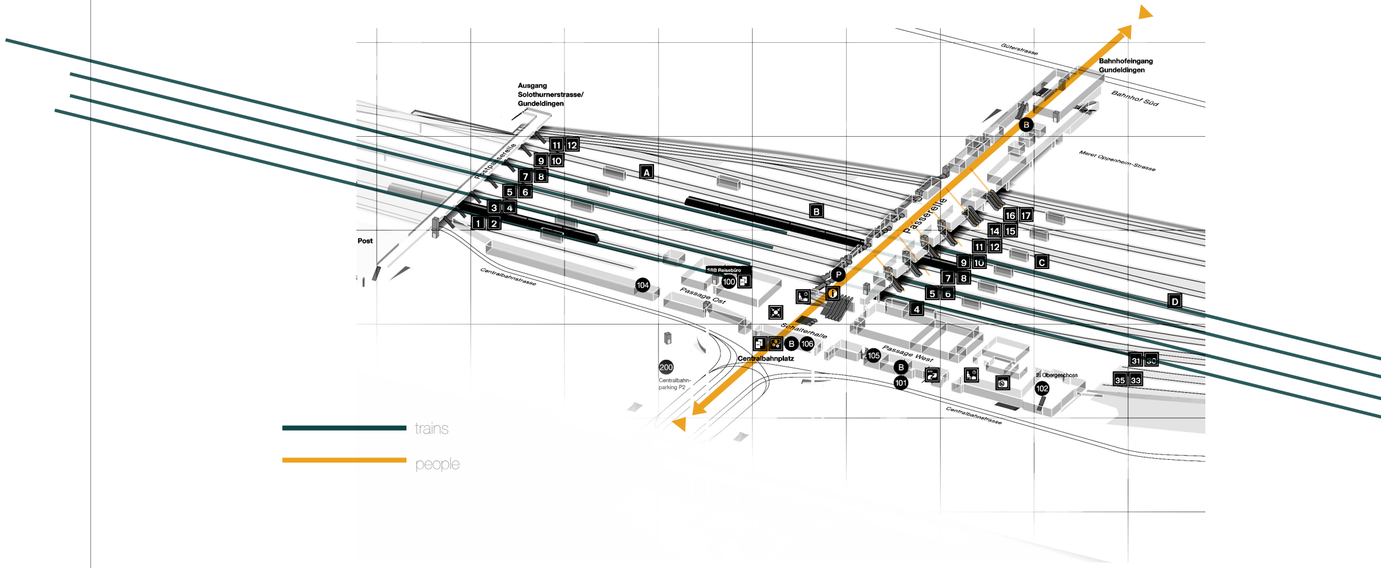
project type: rail station expansion
location: Basel, Switzerland
date: 1996-2003
client: Passarelle Bahnhof Basel SBB
area: 9.000 m² (less parking structure)
cost: 80,000,000 CFH ($ 81,111,200)
rail types: commuter, high speed
address: Centralbahnstraße 20, 4051 Basel

The worlds first international railway station, Basel Swiss Railway Station, was expanded at the turn of the millennium with an addition of a “footbridge” by Cruz y Ortiz. The footbridge serves a double purpose--gathering together the routes to and from trains and connects the historical Centralbahnplatz & Gundeldinger neighborhood. Basel is at a railway crossroads for many rail companies due to its location nearly in the center of Western Europe. The French Railways (SNCF) maintain an annex directly connected to the Swiss Railways Station, additionally, the German Railway [DB] Station is across the river some distance away, but connected by regular train service (RailEurope 2010).

information from cruz y ortiz & rail europe

all images in article Casabella (2006)

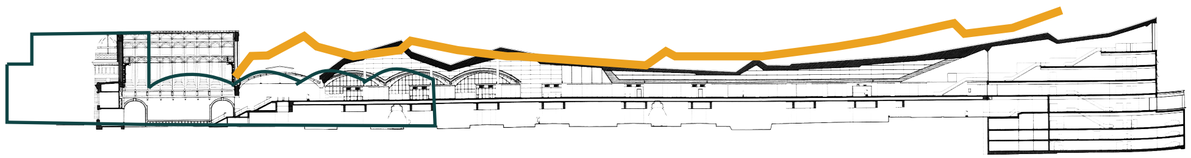




It becomes easy to see how the bridge gathers and draws people, then distributes them to their platforms or links them to the other side. Escalators running parallel to the train tracks drop people from the footbridge to their platforms. Functions for the building combined with the original terminal include passenger waiting room, restrooms, atms, currency exchange, small retail, security offices, information and tourist desks, post office branch, dry cleaner, ticket counter and three cafes in addition to the terminal “footbridge” feature. In the detached parking structure there are bike rentals, parking, taxi pick-up and locker rooms. Between the two buildings, this railway station provides an ideal jumping off point into a new city for an “increasingly nomadic, contemporary society [that] disperses individual activities and interest according to an exploded geography of places” (Tamino 1999).

Prior to the construction of the footbridge crossing the rails on foot was dangerous and difficult. The once divided area now enjoys a pleasant connection while providing amenities for residents.

12



old building

new building

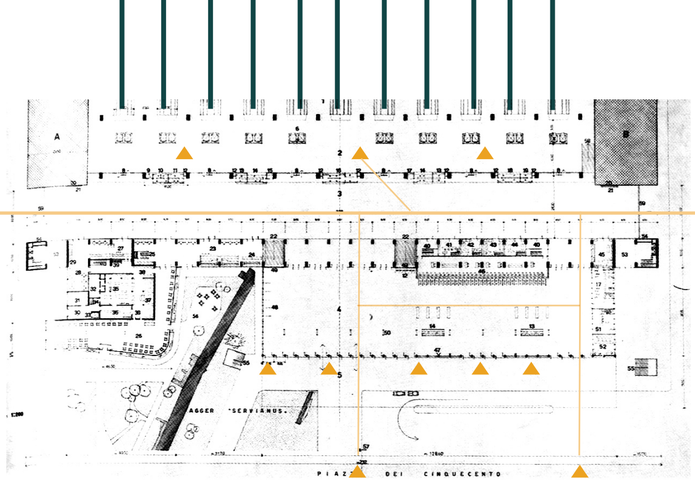
The form of the building creates a guiding spatial sequence that leads people across the bridge, either to their train platform or to the historic Centralbahnplatz across the bridge. Not originally intended as part of the project, commercial uses make a destination of the footbridge itself (Janser 2003). The irregular but still elegant form gives the building presence in a mostly historical portion of Basel, making the station easy to pick out among the older buildings. The undulating roof surface suggests dynamism and perhaps even nods to the Swiss Alps (even the Matterhorn itself). The design fulfills the needs of the city on the border of three countries as an easily identifiable landmark that serves its purpose simply, effectively, and beautifully.

2
grande stazione termini
rome, italy
angiolo mazzoni del grande

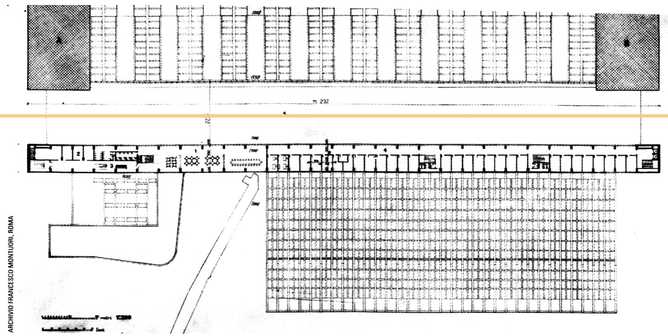
project type: rail station
location: Rome, Italy
date: 1931-1950, renovated 2000
client: Groupie Ferrovio dello Stato
area: 225,000 m²
rail types: metro, long distance, & high speed
address: Piazza di Cinquento

Grande Stazione Termini Roma, with a total surface area 225,000 m2, is frequented by approximately 480,000 people per day, and over 150 million per year (GrandiStazione 2010). Roma Termini is a major hub of both inter and intra city travel. Connected to the main concourses by banks of escalators, the lower level serves the city metro lines, while the street level serves the platforms for the regional and international trains that connect much of Europe. Rennovated late last century by esteemed design firms, Termini is a station that has evolved constantly and beautifully into one of the most important rail stations in Europe.

information from grandi stazione & rail europe



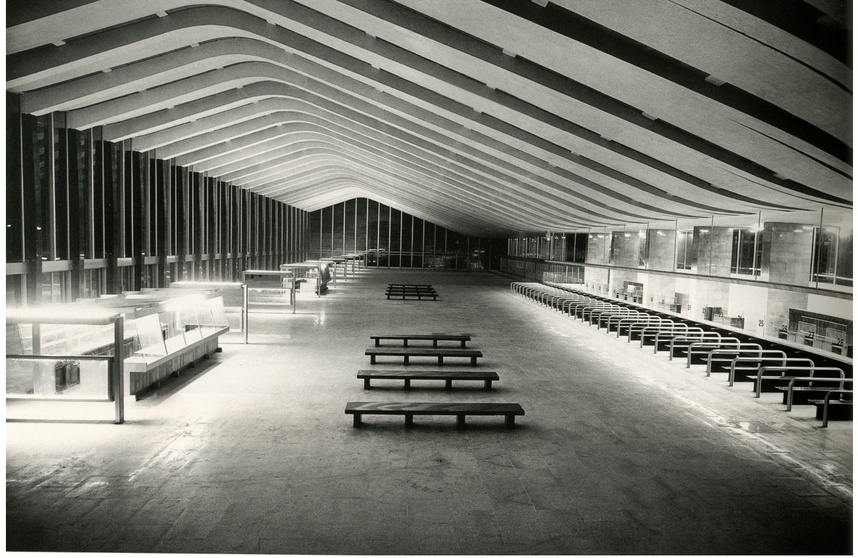
street level plan



mezzanine level plan

trains

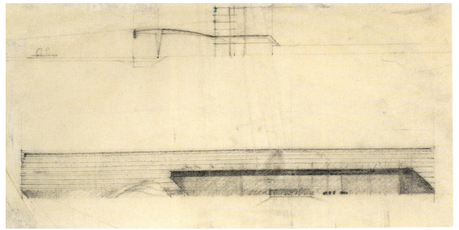
people

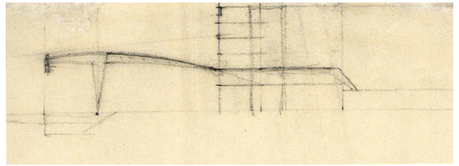


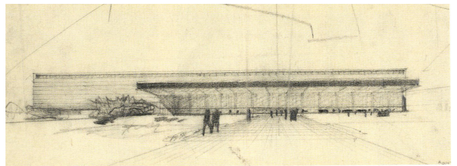
After the second World War, the new republic of Italy held a design contest to finish Mazzoni's terminal. The requirements were for a great entrance hall engaging the Piazza Cinquento (Tamino 2001). The predominant characteristics required of the design project were clear, transparent and functional lines, harmonizing with what had already been built and coexisting with the remains of the walls of the Agger Servianus, 80 meters long (GrandiStazione 2010). The national competition concluded with first prize being jointly awarded to two teams--Montuori, Calini and Vitellozzi, Castellazzi, Fadigati, Pintorello. The result was the addition of the Entrance Concourse (pictured above) which remains the most striking expression of the building today. Recently having gone through renovations in preparation for the Jubilee that included the reincarnation of the Mazzoni Wing as boutique retail space the Stazione is certainly part of "the most vital and significant tissue of activity in the city" (Tamino 2006).

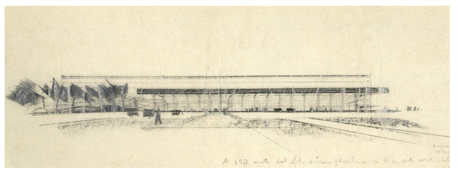
The magic of being connected to the whole world in one hub is tangible in the space. The dynamism of bustling people, the smell of strong espresso and excessive amounts of couture perfumes, the torrent of click clacks from the departures board give the great hall and the supporting concourse a vitality unmatched.

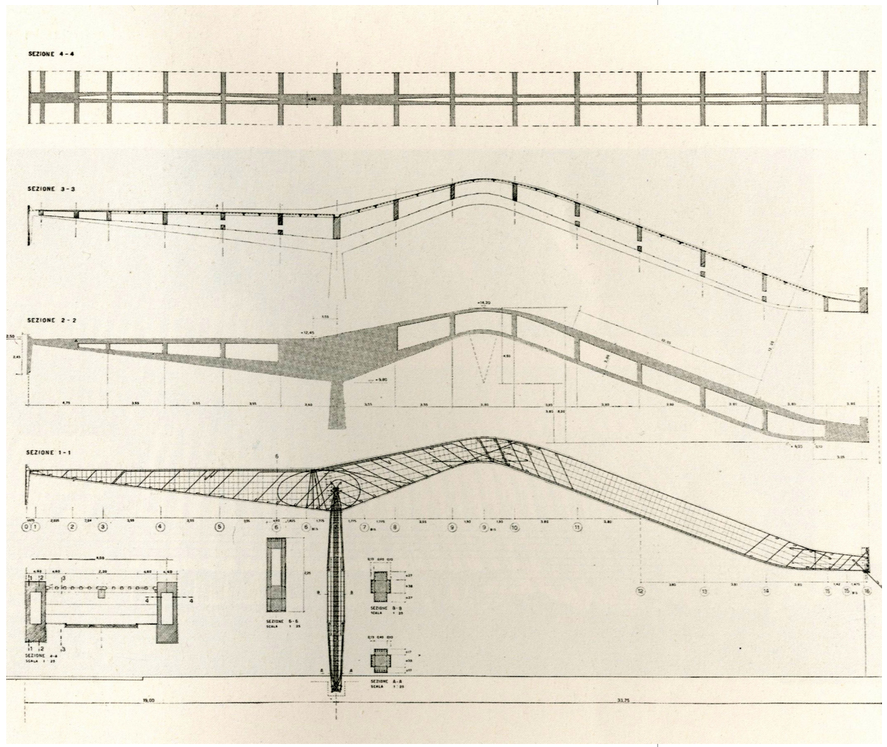
all images Casabella (2001) unless labeled otherwise











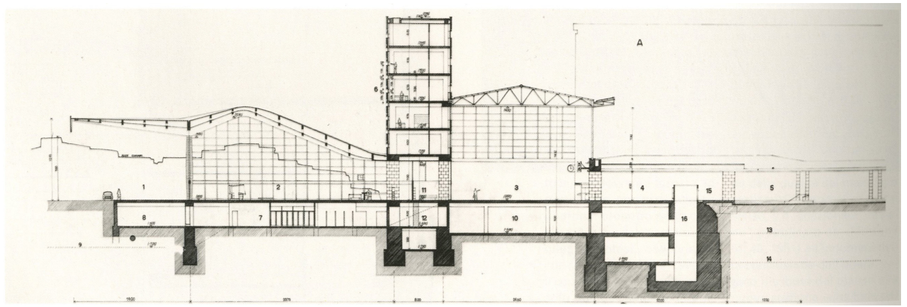


image: wikimedia commons

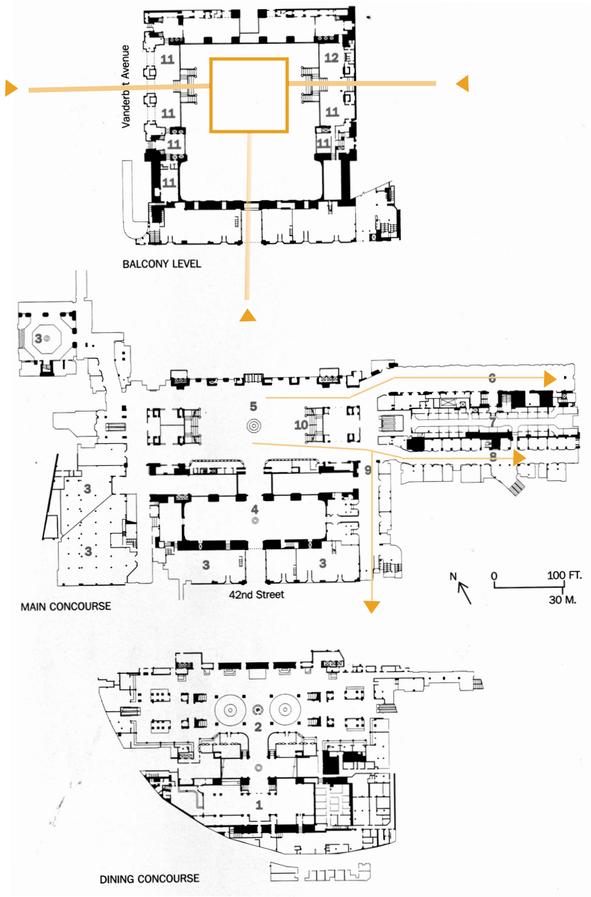
all images Casabella (2001) unless labeled otherwise

3
grand central station
new york, new york
whitney warren
beyer, blinder, belle
(restoration)

project type: rail station
location: Manhattan, New York, New York
date: 1903-1913, 1990-1999
client: Metropolitan Transit Authority
area: 2,090,880 sq. ft
cost: approx $ 2,000,000,000 (infl. adjusted)
$200,000,000 restoration
rail types: commuter
address: 89 East 42nd Street at Park Avenue

Grand Central Station, designed to be the great entrance into the city of New York from across the country and the world for an era burgeoning rail traffic. Architecture editor Doug Haskell described the creation some years later as “majestically fantastic. It stood at the pinnacle of creative effort. Here was compounded the great movement of urban ‘futurism’”(Condit 1981). The vitality of turn of the century New York in building form lives in the Beaux Arts building that has been newly remolded to fit the needs of a modern New York. Rising from the ashes of late last century Grand Central is again avant-garde with the restoration of the original plans and addition of boutique restaurants and shops, the great hall glows and hums with life.

information from Condit & Arch. Record

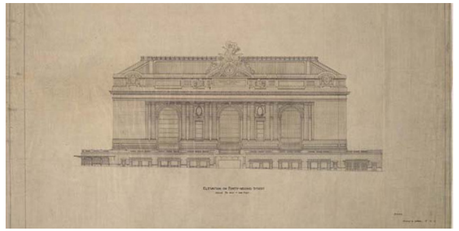


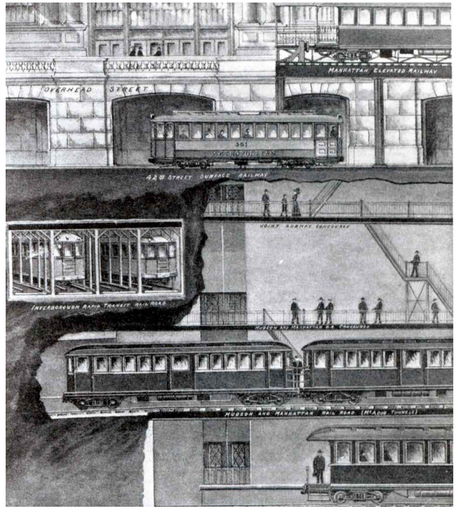
1. *Oyster Bar*
2. *Food court*
3. *Retail*
4. *Main Waiting Room*
5. *Main Concourse*
6. *Graybar Passage*
7. *Market*
8. *Lexington Passage*
9. *42nd Street Passage*
10. *East stair (new)*
11. *Restaurant/bar*
12. *Public space*

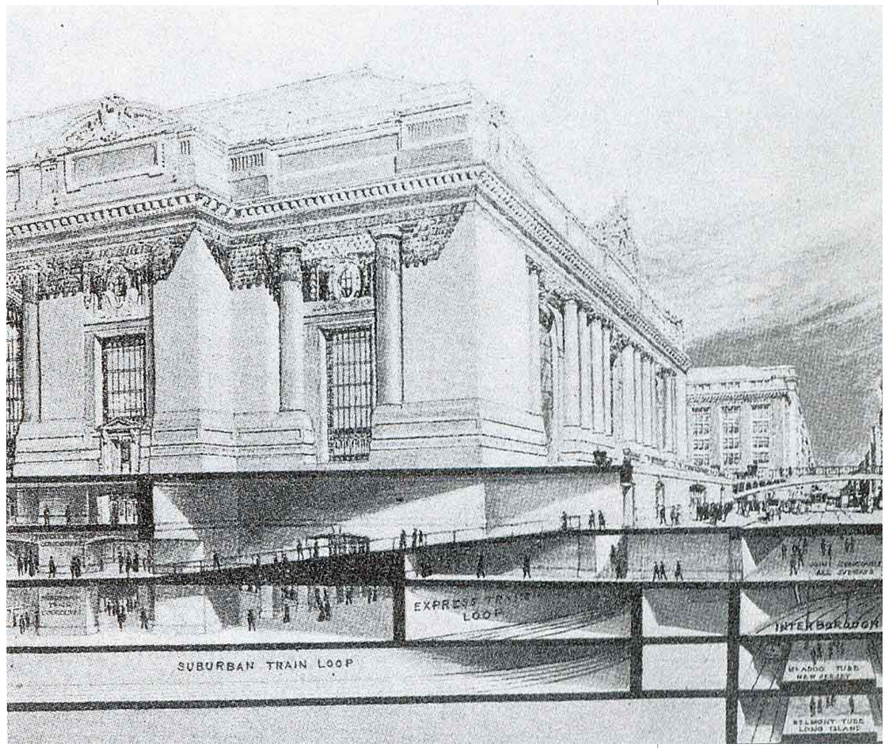
In the most recent renovation, the architects made what was once the lowest concourse (dining concourse) into a food court with boutique eateries. New retail and a market were added, as well as several high end restaurants on the balcony level (Pearson 1999).

image: Beyer, Blinder, Bell for Architecture Record

Grand Central Terminal in its newly revised state is a master class in programming, space planning, and flow. Many of Warren's original ideas that had never been realized or changed for the worse have been restored (Pearson 1999). The "people pumping heart" of Grand Central--the Main Concourse--acts a little like a coin sorter. People flow into the Main Concourse from the main entrances on Vanderbilt, 42nd, and Lexington and are sorted into their commuter trains. It is nearly impossible to not pass through the inspiring Great Hall on their way to and from work daily. An icon of New York, the immense building gracefully yet forcefully moves people through its arteries yet also gives them place and reason to pause and soak in the grandeur and humanness of the spaces.







"The Heart of the World." Pershing Square, Park Avenue and Forty-second Street. Showing group of hotels adjoining the Grand Central Term Also the network of transportation lines, overhead and underground, meeting at this point. The hotels are, from left to right, Murray Hill, Belmont, Manhattan, Biltmore, Commodore. Small building in centre is the railroad station. The bridge leading to it across Forty-second Street is the end of the new Park Avenue Viaduct

all images wikimedia commons unless labeled otherwise

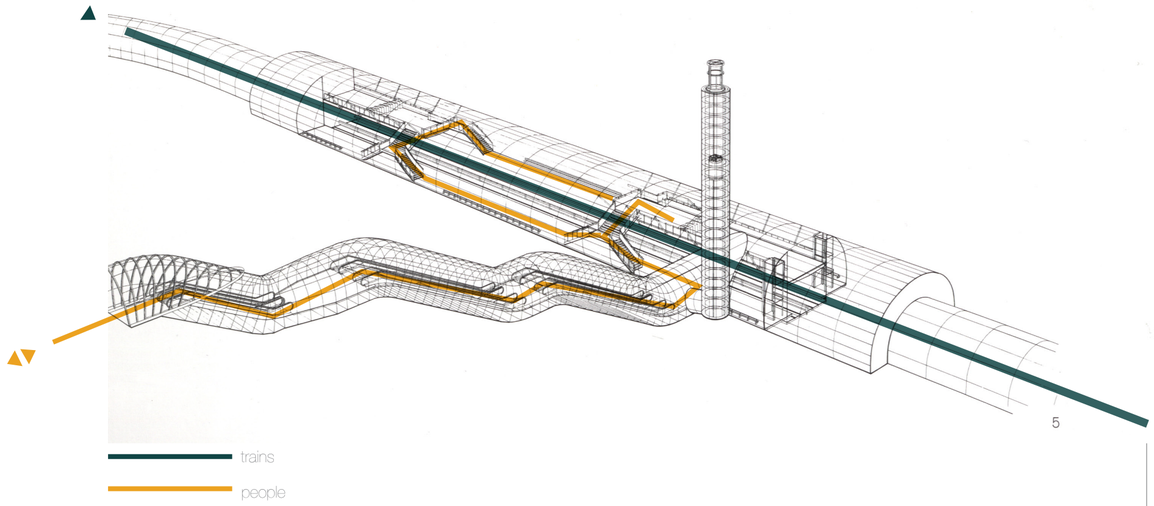
4
bilbao metro system
bilbao, spain
norman foster associates

project type: metro station network
location: Bilbao, Biscay, Spain
date: 1988-1991, 1997-2000
client: Basque Government, Dept of Transport
area: 13,000 m² 61 km long
cost: undefined
rail types: metro
address: Bilbao

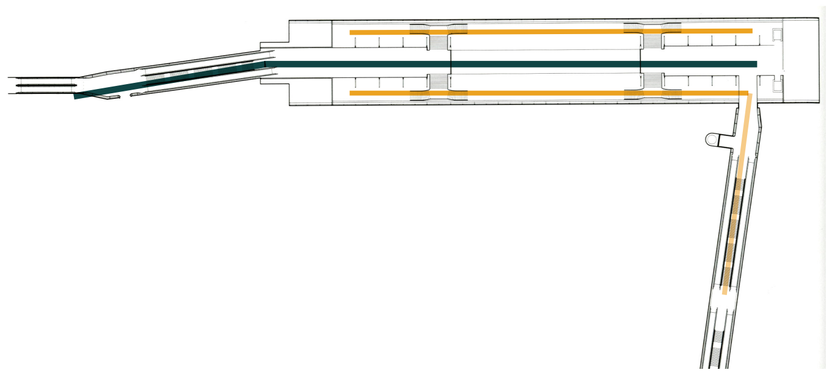
The backbone of a series of major public works and infrastructure projects done beginning in the 1970s, the Bilbao Metro serves a community of one million people (GA Document 1996). Popular with the locals, the crystalline pavilions that mark the entrance to the 11 underground stations have even spawned a new colloquialism, “fosteritos” (Foster & Partners 2010). Nine of the eleven stations are bored, and therefore cylindrical, and two are cut and cover, and therefore rectangular. The cylinders are a direct response to “the forces of nature” (Ed. Dobney 1997). The ground-level expression of the metro--the”fosteritos” let in daylight by day and are lit at night for wayfinding.

information from Global Architecture Document and Foster & Associates

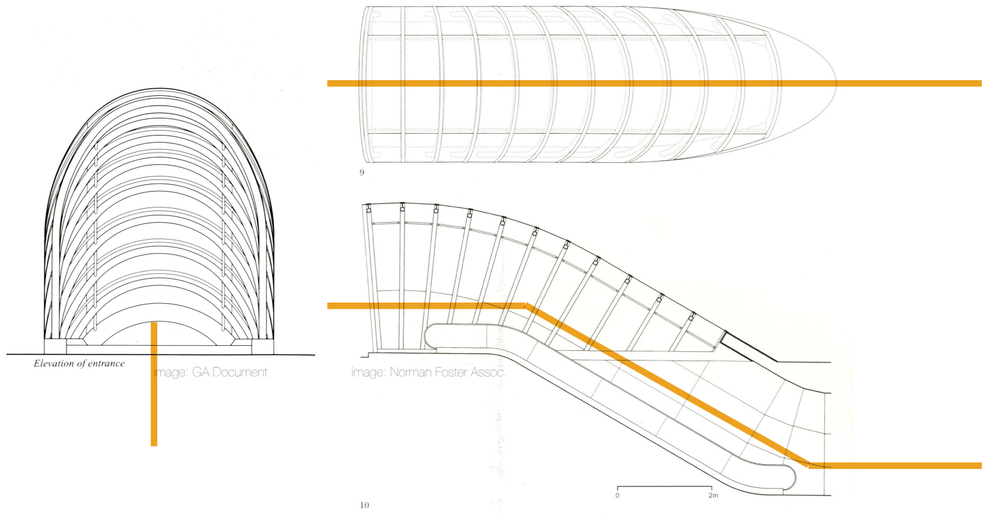
image: wikimedia commons



images: GA Document



One of the main considerations in the design of the metro was the “fluid progression of spaces from street level to platform . . . access to the station is as quick and direct as possible” (GA Document 1996). Simplicity of navigation was key in the design of the system. The official project description on the site states “The great majority of subway systems today are uniformly difficult to negotiate, relying on elaborate signage systems to tell you where to go. In Bilbao, in contrast, the architecture itself is legible. . . The experience of moving through a single grand volume is dramatic” (Foster & Associates 2010). Contributing to the “legibility” of the spaces is the continuity of the full metro system, designed completely by Foster’s Firm. The immediate recognition of the glass “fosteritos” and the familiarity of the flow pattern and form of all stations in relation to each other, coupled with well planned traffic patterns and clean geometric form makes the system easy to use. Durable, but beautiful materials consistent across all construction is easy to maintain and keep beautiful.



Elevation of entrance

image: GA Document

image: Norman Foster Assoc.

image: GA Document

image: Norman Foster Assoc.

summary of case studies

This case study series represents a wide range of different rail station types--from metro transit to high speed international--but all have one thing in common, the recognition of what their specific communities need in a transit hub. In Basel, the city needed to be connected again, in New York it needed to be reworked and reborn, in Rome it needed an emblem of the new republic, and in Bilbao it needed an identity. All of the designs have common elements of transit hubs, amenities, security, the platforms, ticket offices and rails, but they all approach very similar problems in ways unique to the respective culture they belong to. Moreover, they all approach the problem of transit with a sense of joy and delight making daily travel more than just a means of "geting there" but a destination and special experience itself. They are undoubtably dear friends, but they are also locals, a thought that gives further definition to this thesis' premise.

Part of the delight of the transit hub is that it is can't escape being perceived as the zeitgeist of the local culture, indeed it can hardly help being a major part of the zeitgeist of the local culture because so many people there at any given moment. Most of the stations I reviewed had nicknames associated with them--"Fosteritos" (Bilbao), "The Dinosaur (Termini), Grand Central Station (properly Terminal)--a sign of comfort and affection when used interpersonally, In our times, they also are an expression of our growing need for connectivity both geographically and informationally. As a world culture we are increasingly mobile, no longer tethered anywhere by lack of accessibility of transportation methods. "Progressive uprooting of territory and phenomenon of cultural and social fragmentation connected with territorial mobility" (Tamino 2006) that is part of the gradual move towards globalization means that people may increasingly identify with their "home terminal" instead of their social and cultural "home".

The studies were analyzed by connections, circulation patterns, identity within local and international culture, and delightfulness of space. Technically, all projects had well organized spaces and good flow. All achieved this differently with similarities in the scale of the spaces serving similar purposes. One odd thing I noticed was the lack of what I as an American would consider "formal" security measures. Most station websites--including Grand Central Terminal--say they are increasing security measures by adding more guards & security cameras. There is no mention of other detection methods in place.

An additional attribute that came forward in all the spaces was their ability to gather and then sort the people without the feeling of being "herded". All made the experience unique in their own way, but an interesting pattern came forward upon closer study. The two older buildings--Grand Central Station and Grandi Stazione Termini--used what I will cliche-edly call "shock and awe". Massive, impressive spaces that cause you to look up and catch your breath because you didn't remember humans could build such things then gently lead you into the flow with the rest through a series of less grand but no less beautiful spaces to your platform. The two newer projects --Bilbao Metro and Basel Railway Station--use more of what I will call an "adventure" that guides you along with continual engagement with the space "just up ahead" then rewards you with your platform at the end.

These could even be charted on a continuum (fig 2) by year and you will find a gradient from "shock and awe" to "adventure" by varying degrees. Notice the additional scale. As a world (western) culture we have been moving from considerations for the group to considerations for the individual for many of the last centuries, and perhaps through all of recorded time (with a few retrograde motions).

Keeping this all in mind, we are reminded that all the studied project were successful in creating spaces and experiences that delight. Further investigation, perhaps including transit done in Soviet-era constructions and failed spaces will yield precisely what it that makes all of these railway stations successful.

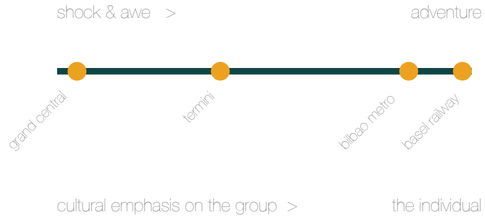


figure 2.

historical context

the shrinking world

Throughout history, with technological advances in transportation and communications methods our world has been shrinking. Journeys that would take years half a millennium ago take only a few hours, and communication that would have taken nearly as long takes only seconds. As mentioned earlier, we are again becoming nomads, now by choice driven by curiosity and business. We as a new global culture demand to be

rail travel in the united states

The railroad revolutionized transportation and business practices in the United States. The changes that took place during the 19th century brought the United States from horse drawn-wagons, carriages, rivers, and canals as the main modes of moving passengers and freight throughout the country to a steam-powered transcontinental railroad that decreased travel time across the country by months. By the beginning of the Civil War 30,000 miles of track had been laid, and increase from 2,818 miles in 1840 (Pritcher & Boyd 2010). The 'golden years" of rail travel were from the 1880s until 1920, when rail travel reached it's zenith at 1.2 billion passengers. Fare increases, the rise of the automobile, and later on the Great Depression decreased ridership in the decades to follow (Pritcher & Boyd). Ridership briefly increased with they debut of the Zephyr in 1934 (Pritcher & Boyd 2010). Amenities such as air conditioning, beautiful streamlined design, and travel in nearly half the time made the Zephyr and its competitors a popular choice for intercity travel, increasing ridership from 38% between 1933 and 1939.

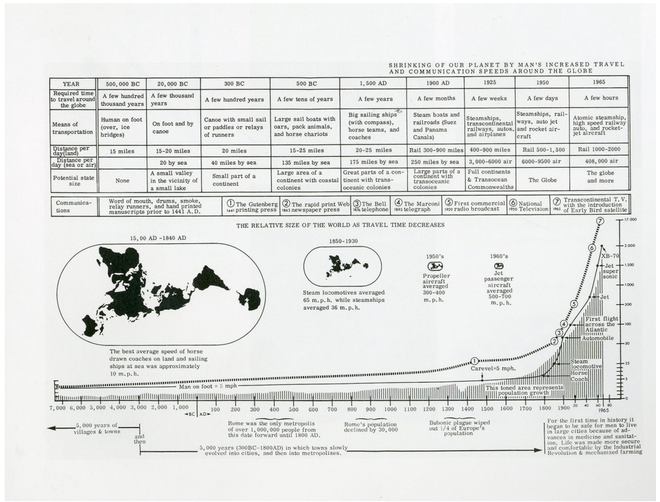
During World War II there were large increases in both ridership and fright volume transporting soldiers, their families, and war supplies across the country. Hopeful for the future of rail travel following the war, many companies ordered new engines and passenger cars. Delays in the production of the new passenger cars crippled the industry's ability to participate in the post-war economic boom. The railroad industry declined dramatically over the next two decades. The dark ages of rail travel in the 1960s - 1970s caused many companies to go bankrupt and many more to be acquired by larger companies (Pritcher & Boyd). In 1971 Amtrak was created to revive the passenger rail industry in the United States. It enjoyed success during the oil embargo of the 1970s but has had relatively low ridership in the last two decades (Amtrak Historical Society 2010).
In recent years both the automobile and air travel industries have also been suffering from increased costs and decreased ridership due to energy cost increases. Commuter rail for short distances to decrease fuel consumption in suburban America, and high speed rail for mid range distances that are not economical for air travel (passengers or airlines) would could possibly fill the gap in travel need of the United States. On December 16th, 2008, the Federal Department of Transportation issued a Request For Proposal for the Northeast Corridor connecting Boston, New Haven, New York, Philadelphia, Baltimore, and Washington D.C. (US Department of Transportation 2010).

chicago

Like most cities, Chicago is a product of prime strategic, economic, and climatic location. In 1673 French Explorers Marquette & Joliet discover a one and a half mile portage linking the Great Lakes and the Mississippi River Basin (Frommers Chicago 2007). A Haitian Canadian named DuSable established a trading post there in the late 18th century. After 70 years of changing hands between the British and French, a treaty was finally signed in 1795 ceding control of the mouth of the Chicago River to the United States. By the Civil War Chicago was growing wildly due to Mississippi River Blockade by the South and its still strategic location which supported Manufacturing, and the Railroads.

rail travel in chicago

"Chicago is the most important railroad center in North America. More lines of track radiate in more directions from Chicago than from any other city. Chicago has long been the most important interchange point for freight traffic between the nation's major railroads and it is the hub of Amtrak, the intercity rail passenger system. Chicago ranks second (behind New York City) in terms of the volume of commuter rail passengers carried each day."(Hudson 2010).



Chicago exists as a major city today because of the railroad system. As the United States expanded to the west after the Civil War, the city grew into a major metropolitan area because it is at the nexus of several major industries. Lumber and logging to the north, grain and cattle to the west and south and was at the farthest west point on the Great Lakes that still has a temperate growing season. Flat land for inexpensive railroad building surrounds Chicago (Hemphill & Richards). Fifty percent of rail freight still goes through Chicago today (City of Chicago 2010).

A form of rapid transit has existed in the city since the late 19th century. Before this, the city streets were overcrowded with horses, people, and streetcars. To avoid further congesting the streets the city decided to elevate the trains 15 feet above the street--that is where the name L" comes from (Frommers Chicago 2007). The CTA (Chicago Transit Authority) began operating in 1947, after it acquired the properties of the Chicago Rapid Transit Company and the Chicago Surface Lines. (CTA 2010).

Union Station, designed by Daniel Burnham and completed after his death is the only station in Chicago to currently support intercity travel. As a hub for Metra and Amtrak lines, the station handles around 50,000 passengers a day, approximately half the number that used the train during World War II (Metra 2010). Union Station originally had a concourse building to east between Canal Street and the Chicago River, which was sold as offices for the Chicago Daily News and Main Post Office. The building was razed in 1969 in favor of two different office buildings. The head house containing the Great Hall is the only remaining above -ground structure (Metra 2010).

Ogilvie Transportation Center, which stands on the proposed site bounded by Clinton, Canal, Madison, and Randolph used to be the Chicago and North Western Terminal to replace its former Wells street station on the other side of the Chicago River. The head house held an immense waiting room. Tracks were on the second level, above a mail substation and other facilities (Metra 2010). The old head house was razed in 1984 to make way for the 42-story Citigroup Center, which was completed in 1987 and now serves as the main station entrance. It also houses a ticketing area as well as a food court and other retail shops, restaurants and amenities (Metra 2010).

Renovations of the passenger platforms were completed in 1997, after which the Transit Center was renamed to honor a Illinois Governor who championed public transit. 40,000 commuters arrive at the station each weekday as the terminus from three Metra routes.
The unused area under the tracks has been transformed into MetraMarket, a restaurant and shopping destination featuring a French market, a drug store, a coffee shop and other retail shops, restaurants and amenities (Metra 2010).

high speed rail

The first high speed rail line was built in Japan for Osaka Olympics in 1964 followed by Italy track between Florence and Rome. Today Spain, Germany, China Belgium, Taiwan, Britain and France all also have high speed rail systems that reach speeds of 150 miles per hour regularly (James 2009). Trains hit 217 miles per hour between Beijing and Tianjin on a track built for the 2008 Olympics, and maglev trains blast by at 268 between Shanghai and the airport (James 2009).

The Department of Transportation is working with States to plan and develop high-speed and intercity passenger rail corridors that range from upgrades to existing services to entirely new rail lines exclusively devoted to 150 to 220 mph trains (Federal Railroad Administration 2010). The corridor development and expansion is expected to provide economic expansion directly through construction and manufacturing jobs, bur also through creating a better environment for economic development in all industries.

goals

academic

This thesis will allow me to explore many different interests I have had throughout college and throughout life. One interest that this has and will help me explore is the development and interaction of several different transportation systems. From the case studies, I am getting a feel for how stations that serve as hubs for multiple rail lines such as commuter, metro, and intercity deal with services that are separate from each other and services that can be shared. Everything from timing of the trains to the movements of masses of people, to which direction the escalators need to be running at any given time needs to be coordinated and I am interested in finding out how the design of a building and its systems can possibly react to real time changes in normal pattern. How does architecture become the ultimate coordinator

Another topic I'm interested in is the concept of delight in experiencing a space or building. What is it in a space, or even an object (such as the dyson airblade hand dryer) that makes you marvel at it? There are certain things I walk past and they just make me smile. Someone designed the sunshade, sculpture, facade, tv remote, teapot, floor material, pizza cutter, or lampost that made me smile, specifically so that I (or anyone else that notices it) would smile. What is difference between something or some place that has the power to do that and something or someplace that doesn't?

The other major thing that I am interested in that ties the other two together is the concept of a building and its personality. Interacting with people is part of the enjoyment we get from affiliation. We delight in their response to what we do, and respond back accordingly. Not so different from our relationship to a building. A well designed building responds to and even anticipates what we need from it both dynamically and statically. Buildings that respond to us with moments of delight that make us smile quickly rise in our esteem until we become emotionally and even psuedo socially attached to the building. Why do we personify things?

I didn't realize that architecture is more than just a beautiful solution to a building but that it engages people on a cultural and even personal level whether or not they are consciously aware of it. I have always known what I liked in buildings, but am now beginning to realize why.

professional

Part of the reason for the typology is a lifelong interest in trains having grown up in a town that, like Chicago, exists because of the railroad. I realized that I actually preferred the stations trains connect to the actual trains when I was traveling in Italy for a summer study tour. I enjoy public transit in how concentrated the culture of the place I was visiting was in their transit buildings. It does require that you look behind the usually enormous advertisements and do a little people watching of locals for comparison, but in my, albeit limited, experience they are basically the children of their cities.

I also feel that the development of the American High Speed rail system will be a large scale, long term endeavor for the country (hopefully) requiring significant design work. Learning now about the background driving the typology will hopefully serve me well in the future.

personal

There is too much money and too many resources invested in building projects for them to merely hold all the cubicles plus some toilets and an elevator or house X number of patients until the are healthy again or get people from point A to point B. That being said, buildings are also too expensive to merely express a designers concept in built form and do nothing else. The building has to be delightful in doing the thing it was built to do, or it simply isn't worth the money, time, or resources. So begins the small crusade that every architect (again, hopefully) begins against mediocrity of the built environment

site analysis

Ogilvie Transportation Center, 11/5/10

There was an age when the glory of Chicago was the railroad, before the skyscrapers came and asked for air rights, before glass and concrete giants cast their cold shadows down for a quarter mile or more, blocking the light from the bright windows that used to greet travelers. All I have actually seen from those years are the beautiful posters and photographs taken and a few holdouts, their awe-inspiring concourses now more solemn, less exuberant for the lack of variety in the people they serve. I will be taking a train today, back to my aunt and uncle's. However, there will be no grand stair or blazing bright skylight to greet me, there will be dirty, broken concrete steps, sherbet orange artificial lights, a low though brightly lit small concourse, and vending machines. It isn't that there is anything inherently wrong with Millennium station it is certainly nice enough, but they ran out of money at the doors of the station, not an inch further is there anything to love on either the side of the platforms or the stair to the sidewalk. The station I'm sitting at took a lot of language from a shopping mall and none at all from the structure I've read used to majestically stand here with a vaulted roof and tall, bright windows. Where I sit, in the food court that happens to have old television screens telling me arrivals and departures in lime green fontless text. Almost all the light comes from the neon signs and a few scattered fluorescent tubes hanging from something behind the shiny false ceiling. All I can hear or smell are deep fryers, and their is a light coating of oil everywhere, There seems to be oil in the air. Upstairs there is another timetable and more black-glassed doors. I didn't see the ones downstairs before because they were nowhere near anything but a janitor's closet and a lonely Mrs. Fields on the other side of the main staircase. There is an entirely glass ceiling, but only a cool gray light coming in despite the sunny day outside. I can only assume they chose the dark tinted glass to prevent solar gain...on the north side of the building shaded by the Citibank tower upper floors. By the way, the elevators leading to the tower are beautiful travertine with elegant signage and a small glass and cherry reception desk. In the morning when the commuters get here it must be chaotic, as there is no place for them to go after leaving the platform doors but straight out.

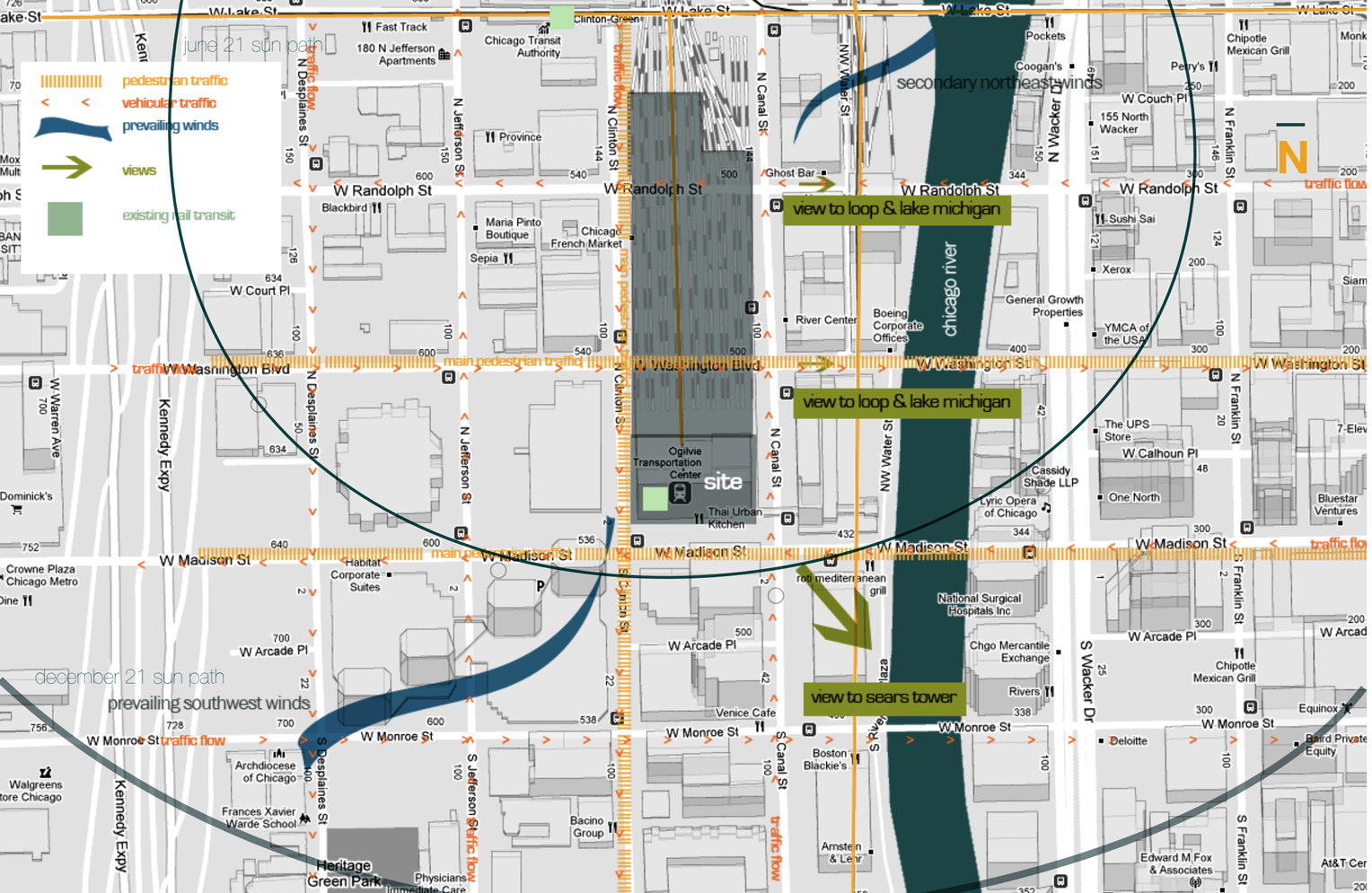
Walking around the perimeter of the "head house" and the building beneath the tracks I recall that they are trying to get retailers to move in there. Unfortunately there are only black tunnels and virtually no openings to the street that people actually seem to be using--Randolph, I believe. I don't really want to be here any more. Officially don't feel bad about tearing this place down any more.

West Loop, 11/6/10

Near Ogilvie there is more sunlight and it is brighter than the walk behind me. Much less like the deep canyons of the Loop. The airspace is less densely packed in the West Loop. Something about the sidewalks seem less affluent though, like all the money rests just on the other side of the Chicago River. I only notice because of the change in the texture of the sidewalk here form the last. Clean stark granite feels much different underfoot than run of the mill concrete. There is also more trash here, blowing around the concentrated breeze. I barely noticed any wind in the suburbs. Its a Saturday, so there is an eerie emptiness everywhere that probably isn't helping the situation. There is no life around here, except for some wanderers who appear to not be part of the 9-5 crowd. The contrast between the shadowed canyons and the bright intersecting canyons make the light oddly geometric and directional, despite it being a hazy day.

The Loop

Much more life here in the pre-shopping season buzz. Around Millennium park there are lots of people despite the cold weather. I enjoy the bustle. I can imagine that the West Loop is maybe like this during the work day, when the great beehives hold their little worker bees. I'm wondering how I can draw this weekend life that clings to Millennium Park across the Loop & the River to the West Loop. Termini never hibernated, so it can be done.



information for map compiled from US Weather Service, Gaisma.com, & Google Maps

grids

There is an amazingly unvarying North-South grid in Chicago. The only deviations are along the river and the lake shore. The building forms, at least at street level are governed mostly by this rigid grid. Even the rapid transit system-- the "L" -- follows the street grid. The land has only minor elevation changes, so there is no natural features besides the river to break up the grid, and in many places it seems the river just continues right over it in a multitude of bridges.

geometry

Geometries of the buildings closely follow the street and parcel grid near the street level and usually follow that for the majority of their heights. Near the top, however, they start jockeying for attention with various roof lines. On the site the Citibank building sports a complex series of barrel vaults--perhaps a nod to the interior of the head house it replaces.

shade & shadow

Above the train shed, there is a clearing in the dense development giving the site opportunities for daylighting that are uncommon to downtown Chicago. In all other directions the building-canyons cast deep, sharp shadows. To the west of the site there are also a series of mid-rise buildings, and to the north, the tracks clear a path. The site has the possibility of becoming the sunny clearing in a tall, dark forest.

utilities

The current structure accesses all the normal Utilities of the city.

surrounding built environment

There is mid-rise buildings to the northwest, and high-rise immediately to the south and east and direct west of the site's current high rise. The Clinton Green Line 'L' station is on the north end of the site.

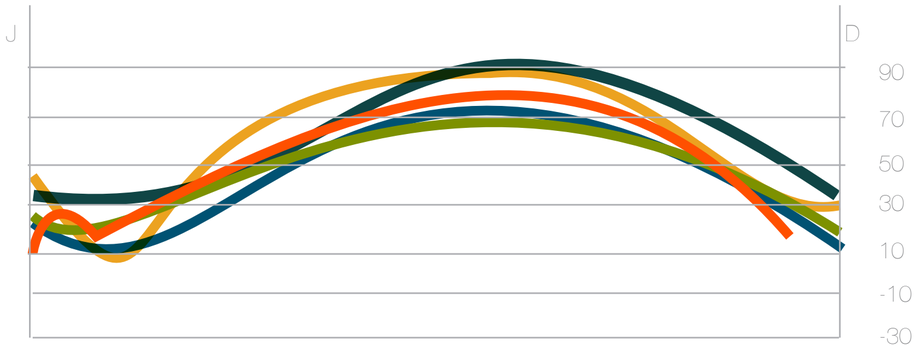
light

Sunlight is the main lighting factor on the site, though glare reflection from nearby high rises may be a problem later in the day on bright days

water

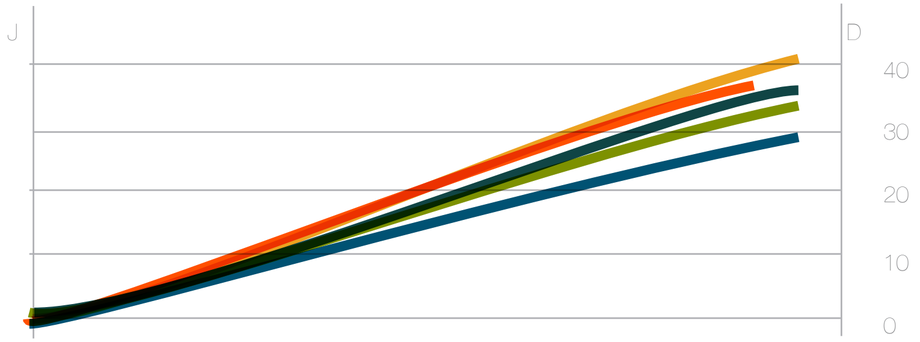
The site is one city block away from the Chicago River. The site slopes slightly toward the river. From the east side of the site, you can smell the river, and possibly the garbage barges that use it as well. See following pages for precipitation reports.

annual temperature (F), Chicago O'Hare

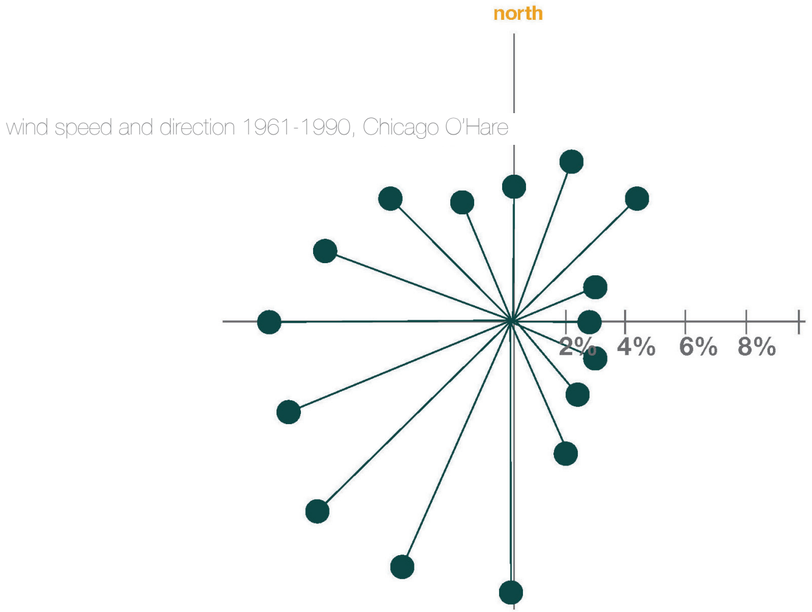


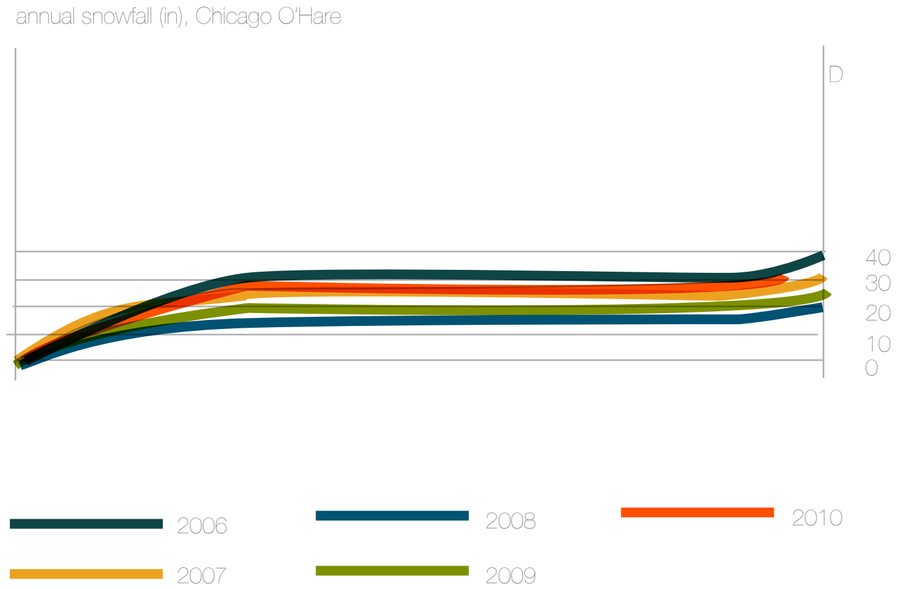
2006
2007
2008
2009
2010

annual precipitation (in), Chicago O'Hare

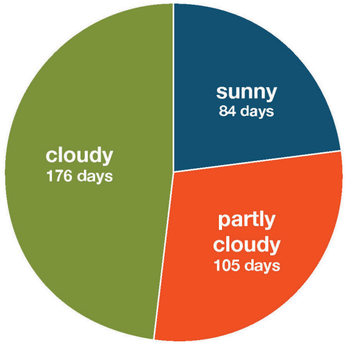


2006
2007
2008
2009
2010


north
wind speed and direction 1961-1990, Chicago O'Hare
2%
4%
6%
8%


annual snowfall (in), Chicago O'Hare
J
D
40
30
20
10
0
2006
2007
2008
2009
2010

average percent cloudy days, Chicago, Il



wind

there are prevailing south-southwest winds on the site, though it is likely that winds will be channeled and therefore intensified due to the densely built environment. On the northerly side of the site, there may be less effect of the channeled winds due to a lower level of density and smaller building heights.

site character & distress

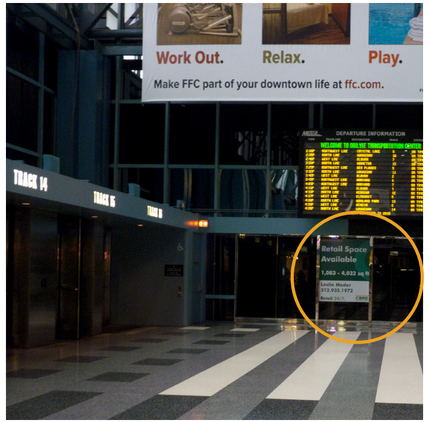
The area of Chicago where the site is shows signs of aging and economic distress. There are many advertisements for open office space nearby and some empty storefronts. The nearest high rises were constructed with little attention to urban space planning and much attention to profit. There is no maintained vegetation on the main entrance side of the site. Several small sidewalk trees are on the western side of the train shed, though empty tree spaces exist and collect garbage. There is no age difference in the trees, presumably they have not ever replanted dead trees on the site.

human use

The site is 100% built, with no remaining green space. It serves as office space and a commuter rail terminus. No recreational activity takes place near the site, with the nearest cafe with outdoor space exsisting 5 blocks away.

soils

The soils are unsuitable for agriculture unless improved due to long use as an urban space with many excavations removing topsoil over the history of the site. Geologic strata include glacial tills and silt due to the proximity of the site to the Chicago River and glaciated history. Years of excavation and infill for construction have disrupted the normal soil strata significantly.



for sale

empty behind the glass

no people, large impenetrable surface

aerial view of site

programmatic requirements

approximately 2.5 million sq ft.

Main Concourse-- 200,000 sq. ft
The main concourse , lobby, “the sorter”

Waiting Area -- 150,000 sq. ft
near amenities for convenience, particular elements of fascination and delight that incite curiosity are a must.

Ticket Offices -- 125,000 sq. ft
Both traditional ticket offices & ticket vending machines. Schedule generation will be available through ticket barcode scans or apps.

Currency Exchange/ ATMS --12,500 sq. ft

Platforms and tracks -- 1,125,000 sq. ft
information about trains quickly downloadable, or accessible through large screens and barcode on ticket. Platforms will not be creepy despite very utilitarian purpose.

Restaurants, Deli, & Bars (3-5) -- 325,000 sq. ft
a variety of cuisines & provide a place for meeting people and enjoying the bustle of people. Chain restaurants will in general avoided to provide a more unique experience of Chicago. At least one option will have portable food.

Coffee/ Tea -- 5,000 sq. ft
for people watching and caffeination

Retail (Boutique) -- 250,000 sq. ft
- florist
- paper goods
- dry cleaner/ tailor
- newsstand/ digital bookstore
- boutique retail
- art institute branch/ museum stores
- local artists studio / exhibit
- small gallery
- shoe repair
- chocolatier
- florist
- library branch
- electronics repair/genius bar

Miscellaneous -- 37,500 sq. ft
charging station -- to charge stuff wirelessly, integrated into waiting room furniture
information -- staffed, provide apps for mobile phones that guide user around the city. provide traditional navigation means.
tourism office/Chicago concierge -- Similar concierge services to large high end hotels for a fee. Traditional tourist services free.

Public Art
for delight and cultural expression

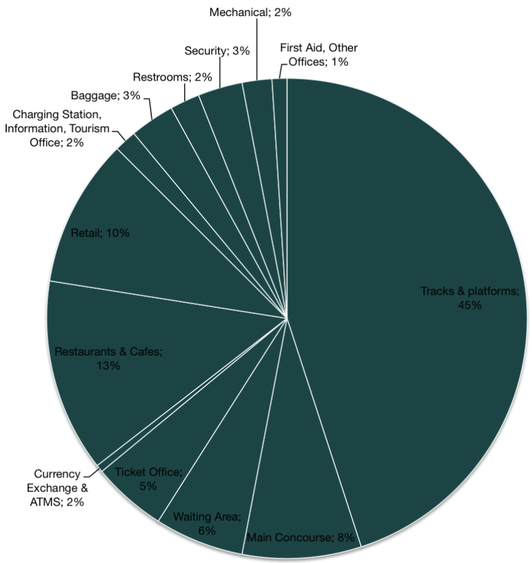
Security Offices -- 75,000 sq. ft
camera screening rooms, offices, break room & locker rooms for guards.

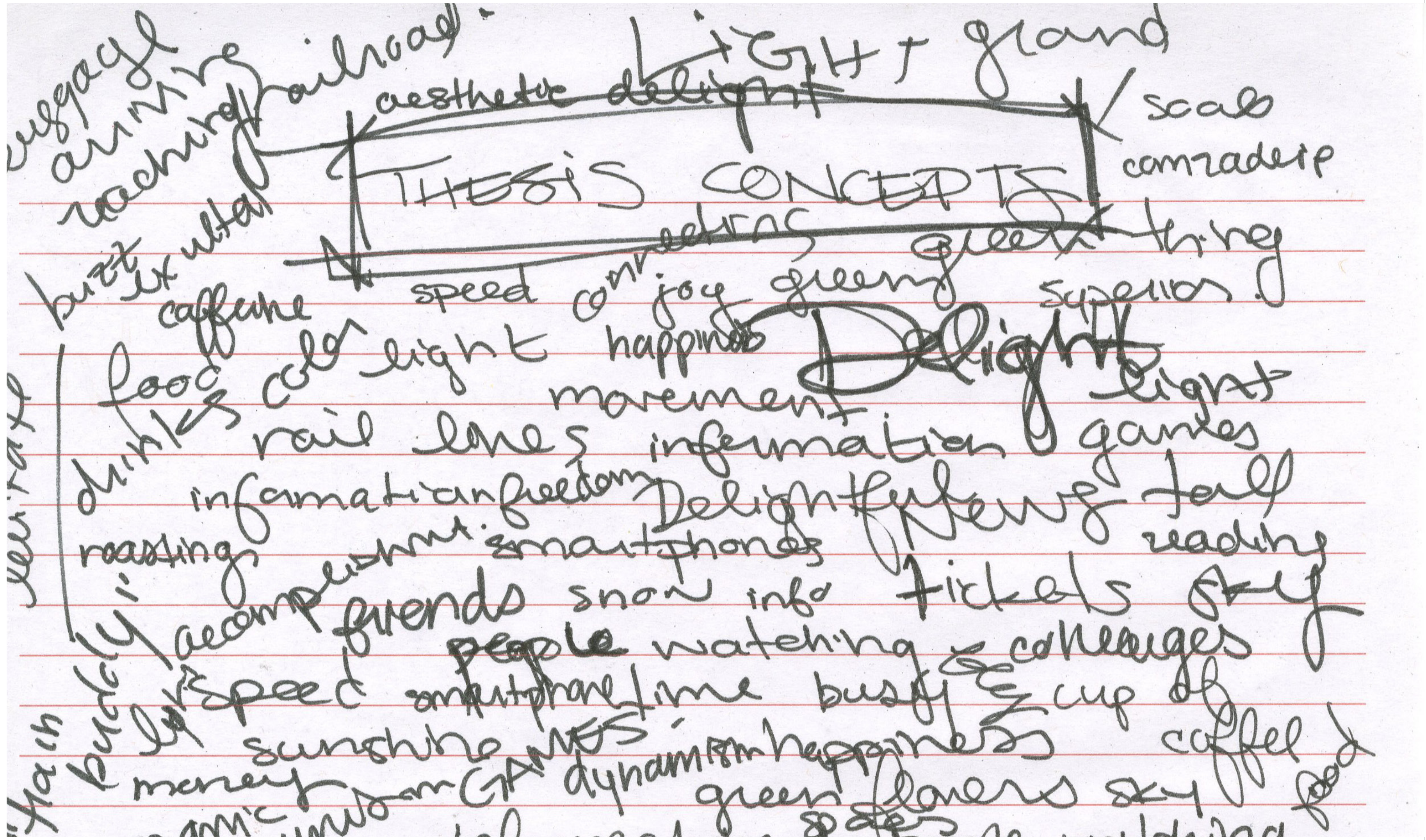
Car Rental Area -- 7,500 sq. ft

Baggage Holding - 7,500 sq. ft
for long range train large items temporary storage & transfer

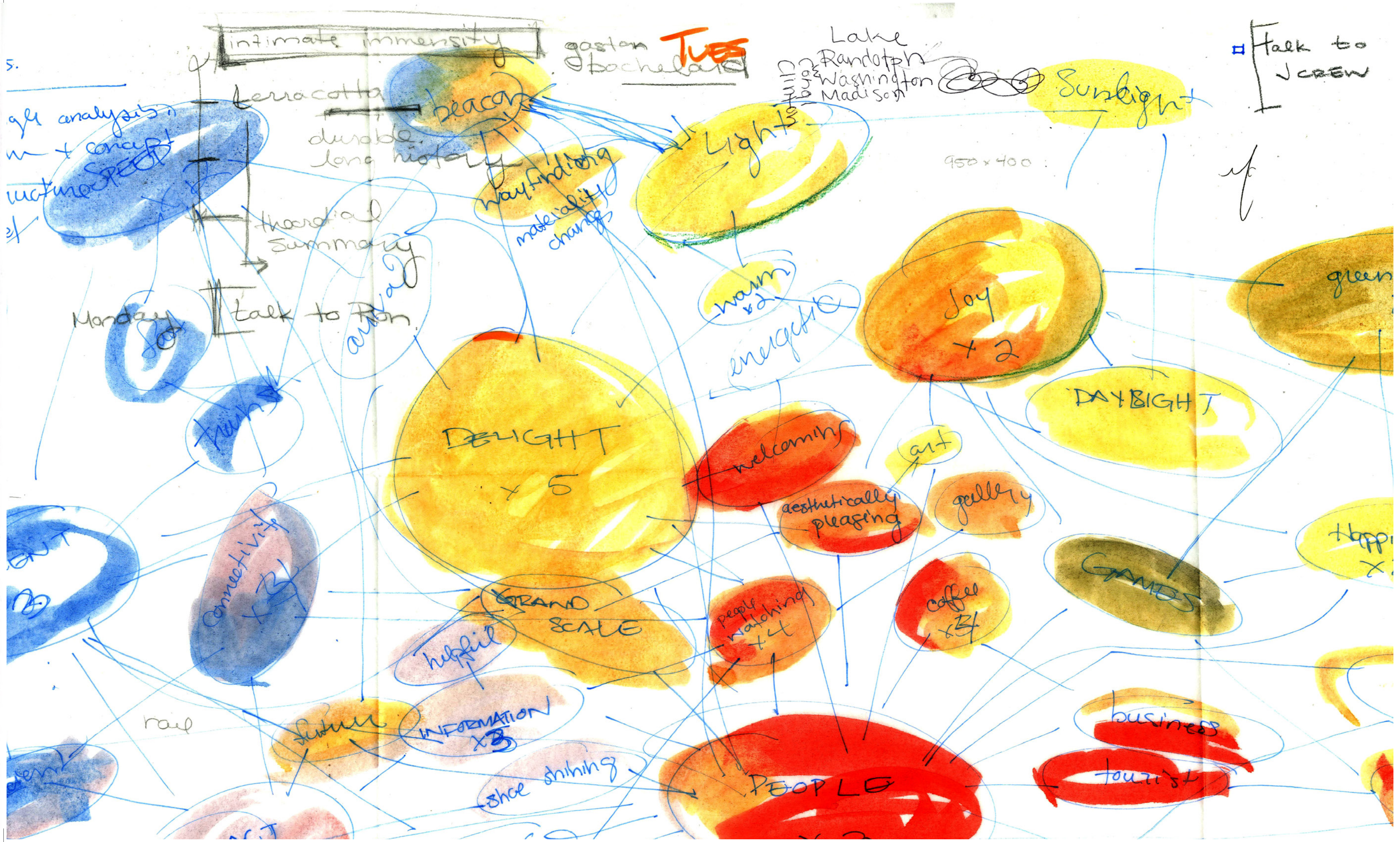
First Aid and other offices -- 25,000 sq. ft
Restrooms -- 4%

Green Space -- undefined
exterior or roof function, will also become a public park for the city, additionally will serve as exterior seating for restaurants and offer games (equipment for a very small fee from tourism office)

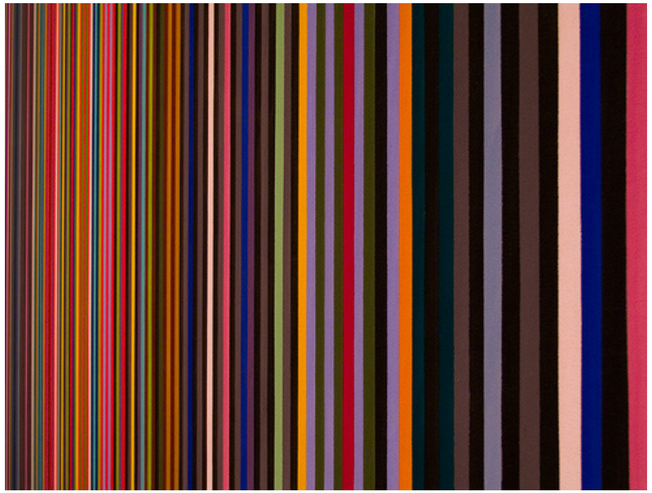


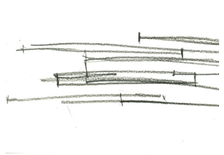


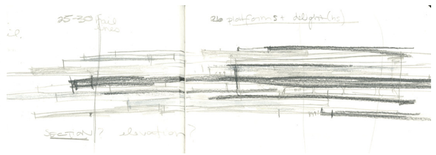
thoughts that popped into my head while thinking about thesis

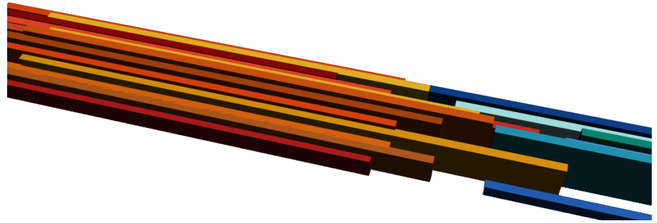


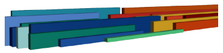
connecting the thoughts

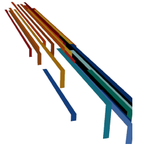


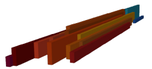


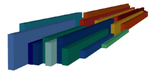


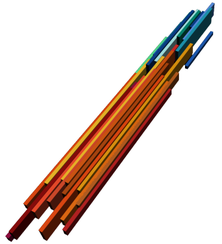


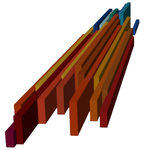


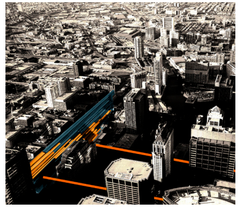






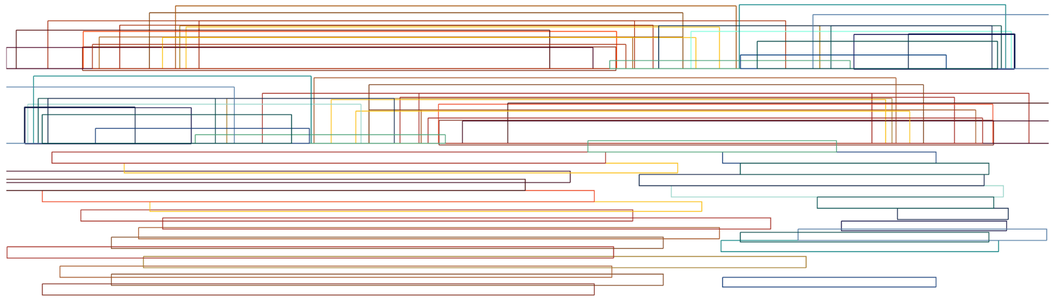




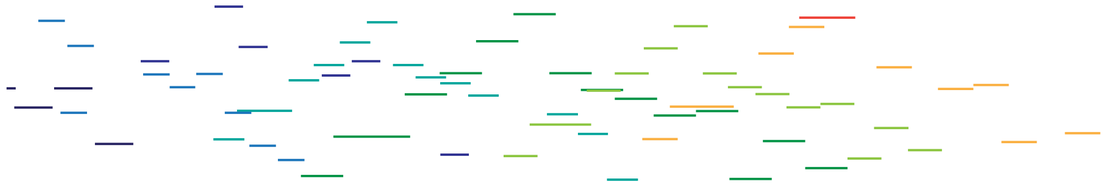


inspiration: gene davis , rail yards, norman foster, and the city of Chicago itself

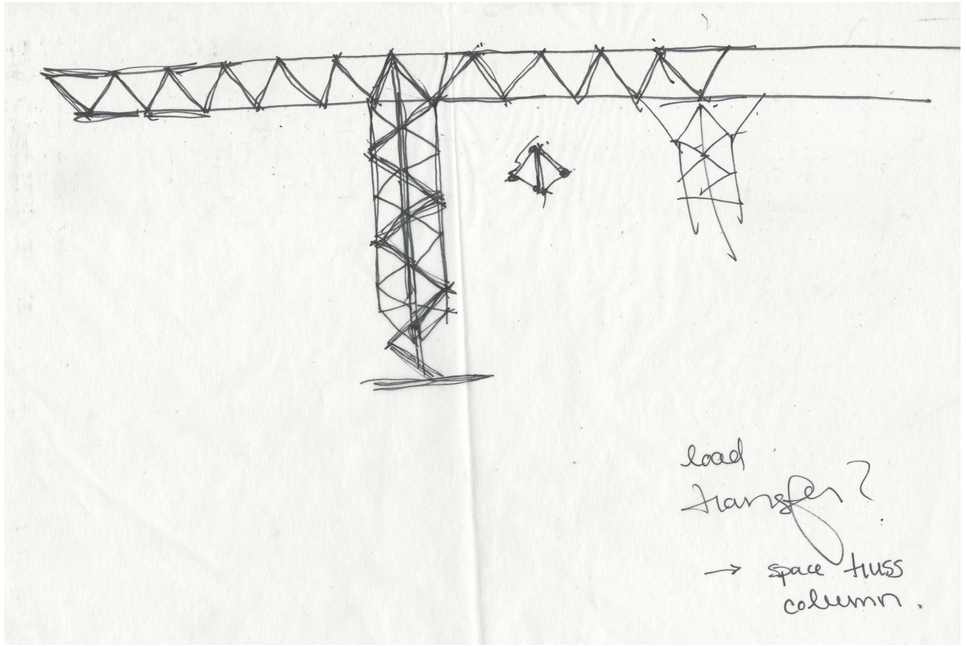
conceptual model in 3DS Max



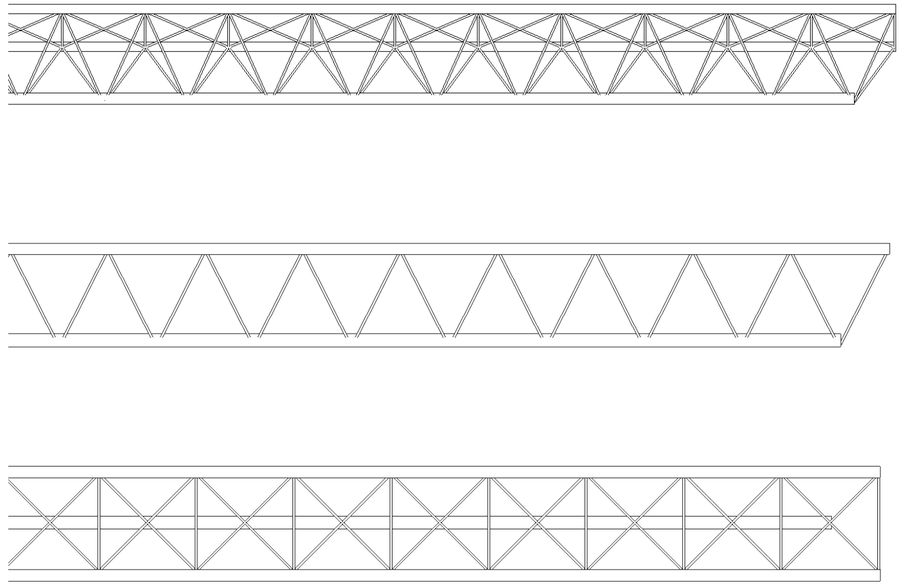
section cuts of conceptual model, study in form interactions



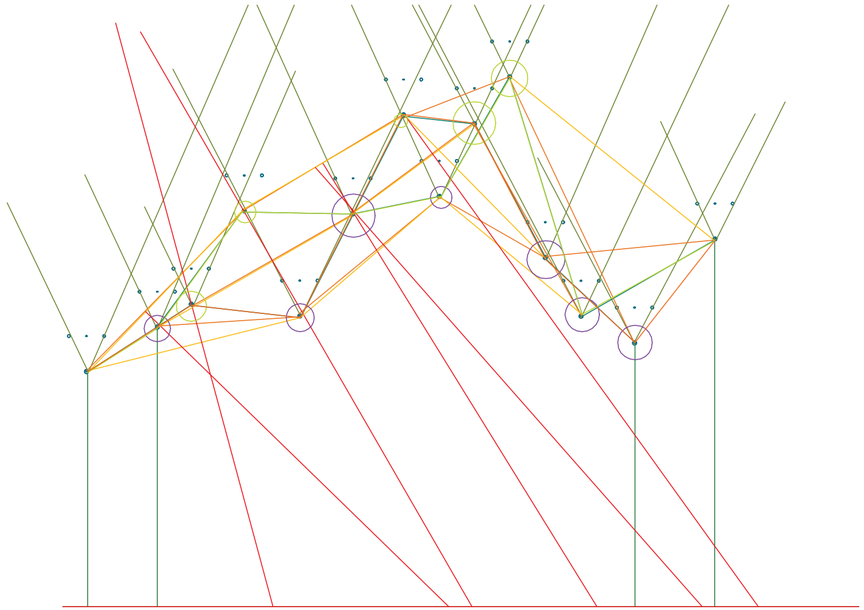
transverse section through conceptual model sections. space height interactions study.



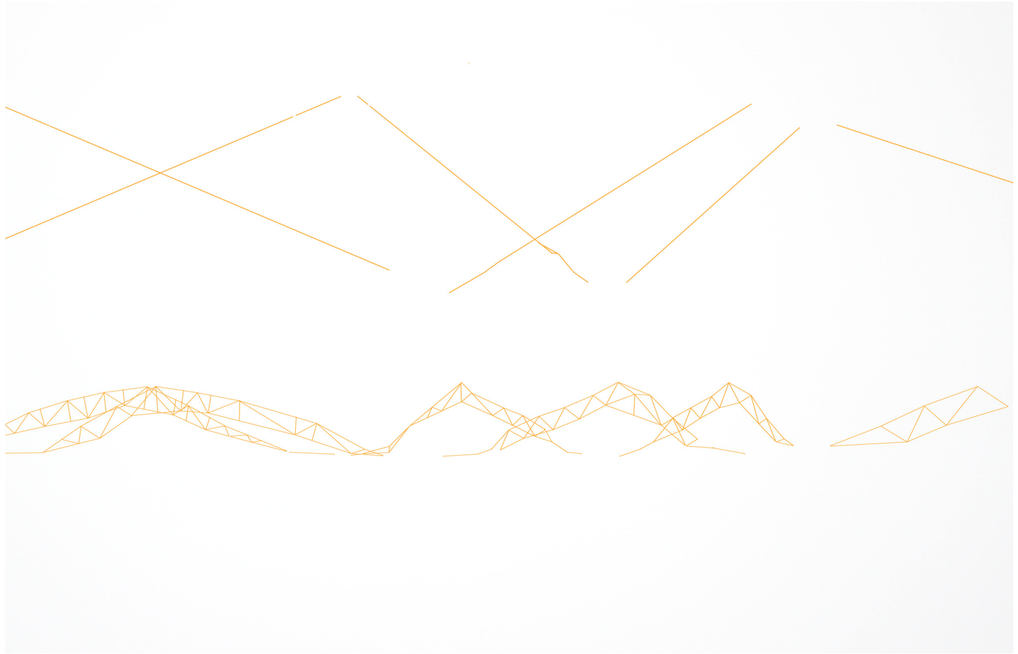
truss column attempt



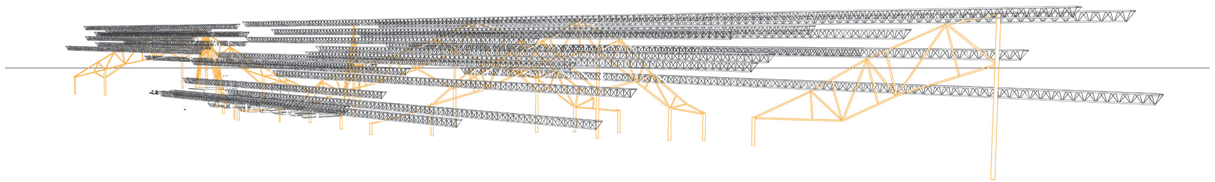
prismatic trusses modeled in 3DS, made parametric in Revit.

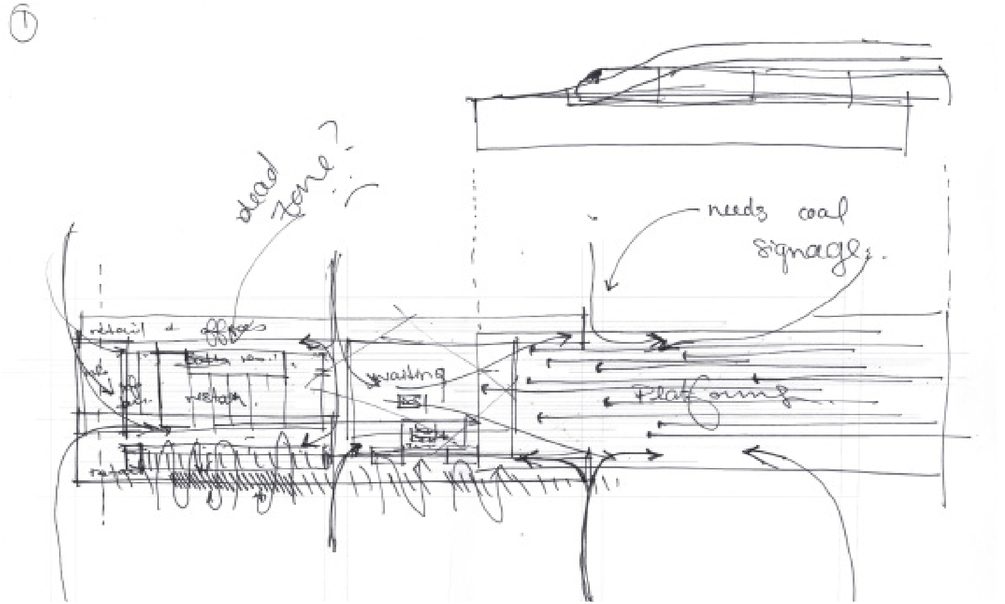


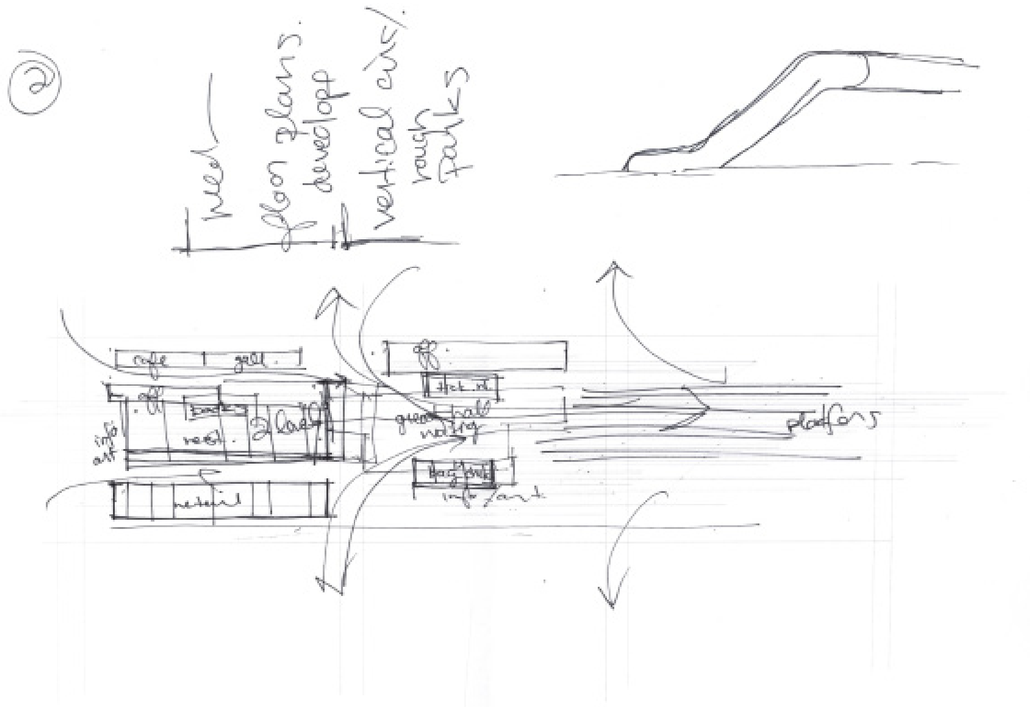
figuring out how to support the long prismatic trusses using minimal columns, step-by-step: 1. arrange prismatic trusses at desired heights and locations. 2. connect the dots (bottom chord). 3. consider possibility of extending angles of prismatic trusses. 4. stop considering that. 5. study what happens when every-other bottom chord, or every third bottom chord is connected. 6. consider here loads gather, and need support. 6. consider column system based on resultant vectors of chord connections. 7. stop considering that. 8. consolidate loads onto minimal number of columns. 9. all done. structural system is now established.

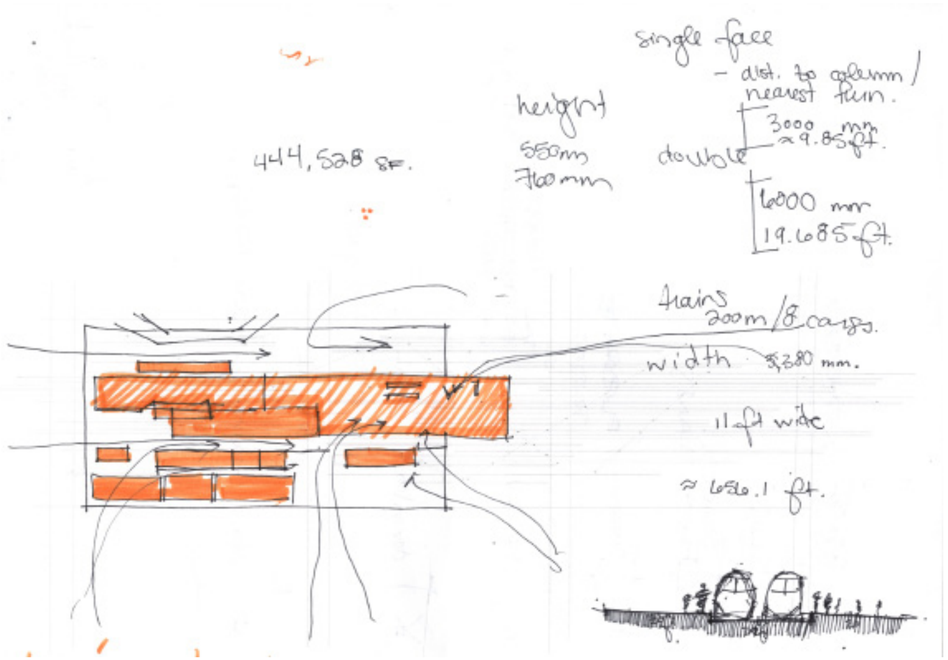


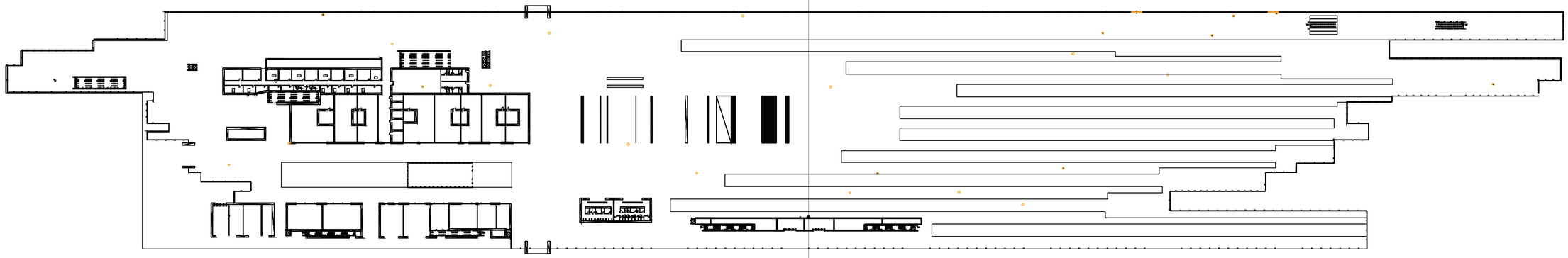
abstract trusses born from previous processes




dead zone?
needs coal signage.
waiting
platforms

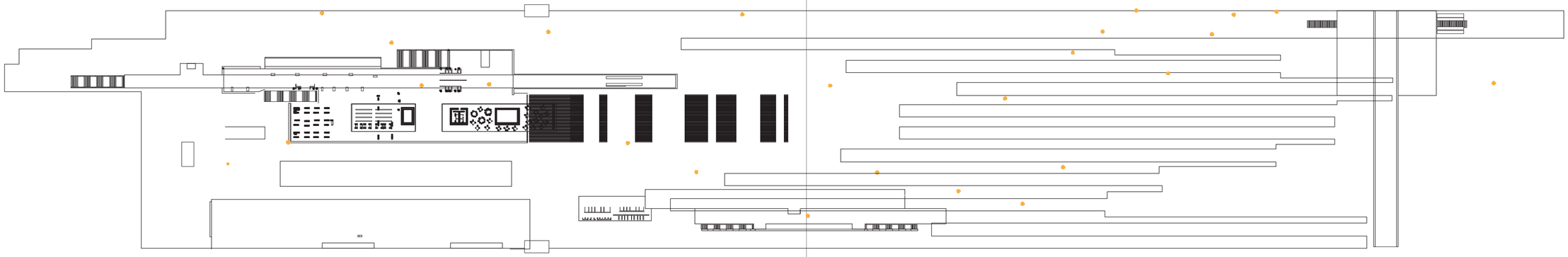

need
floor plans
develop
vertical circ/
rough
tanks
platforms


single face
- dist. to column / nearest turn.
3000 mm ≈ 9.85 ft.
double
6000 mm
19.6085 ft.
444,528 sf.
height
550mm
700mm
trains
2 oom / 8 cars.
width 5,380 mm.
11 ft wide
≈ 656.1 ft.



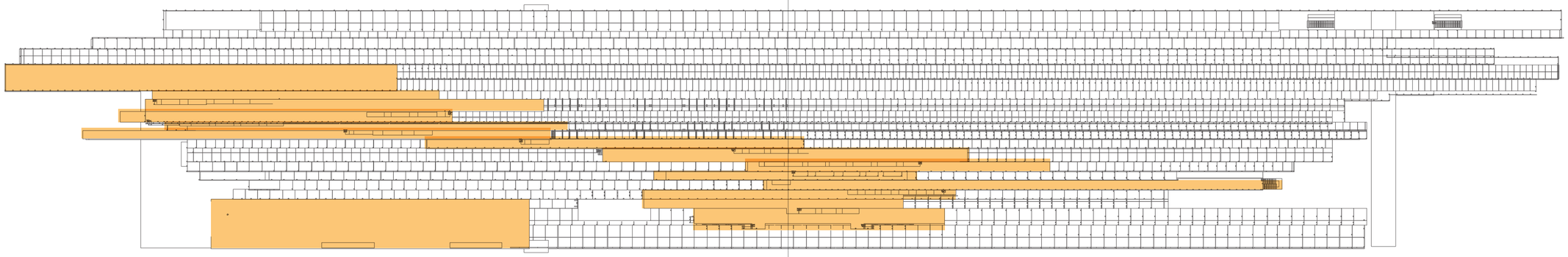
350ft

street level floor plan



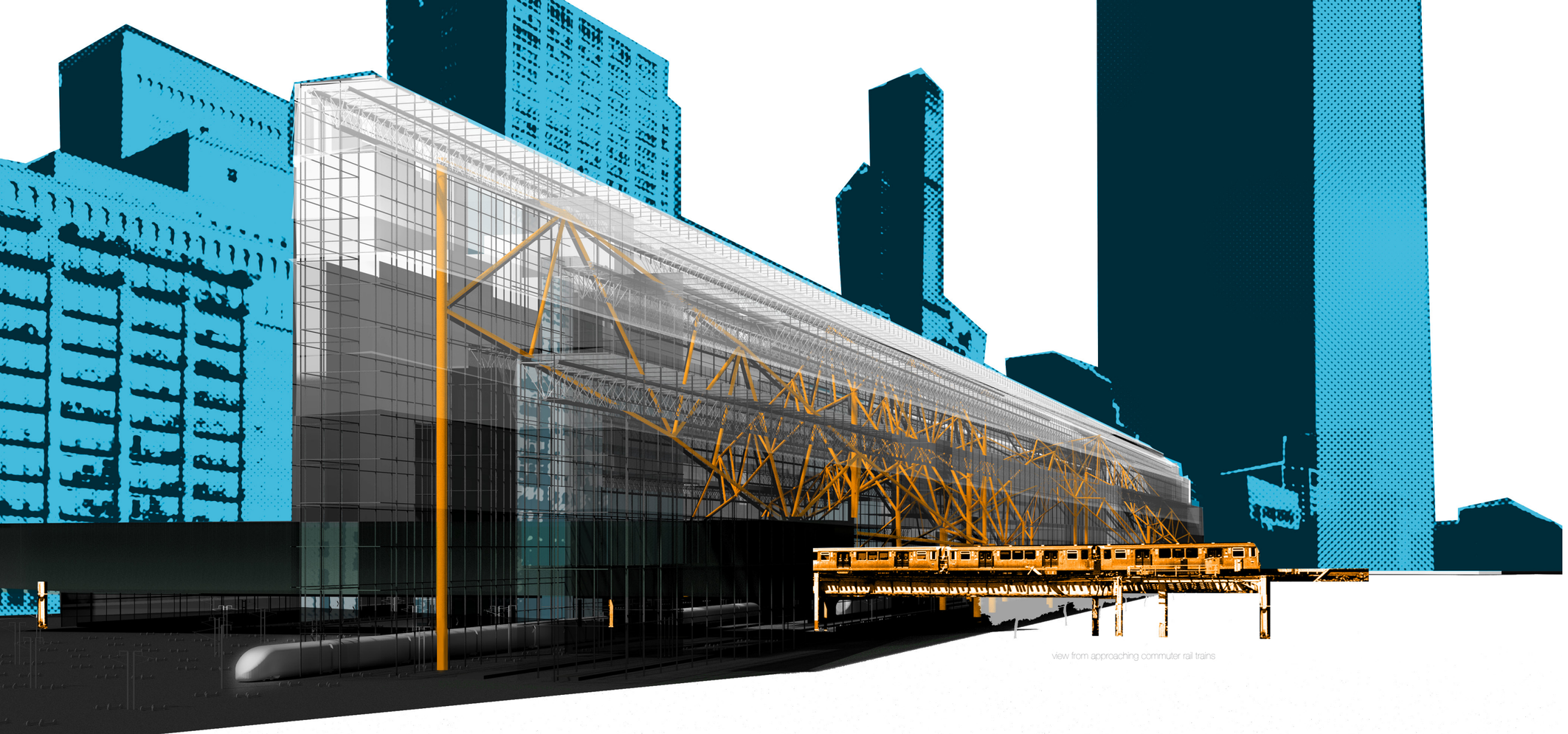
350ft

mezzanine f& 'L' floor level

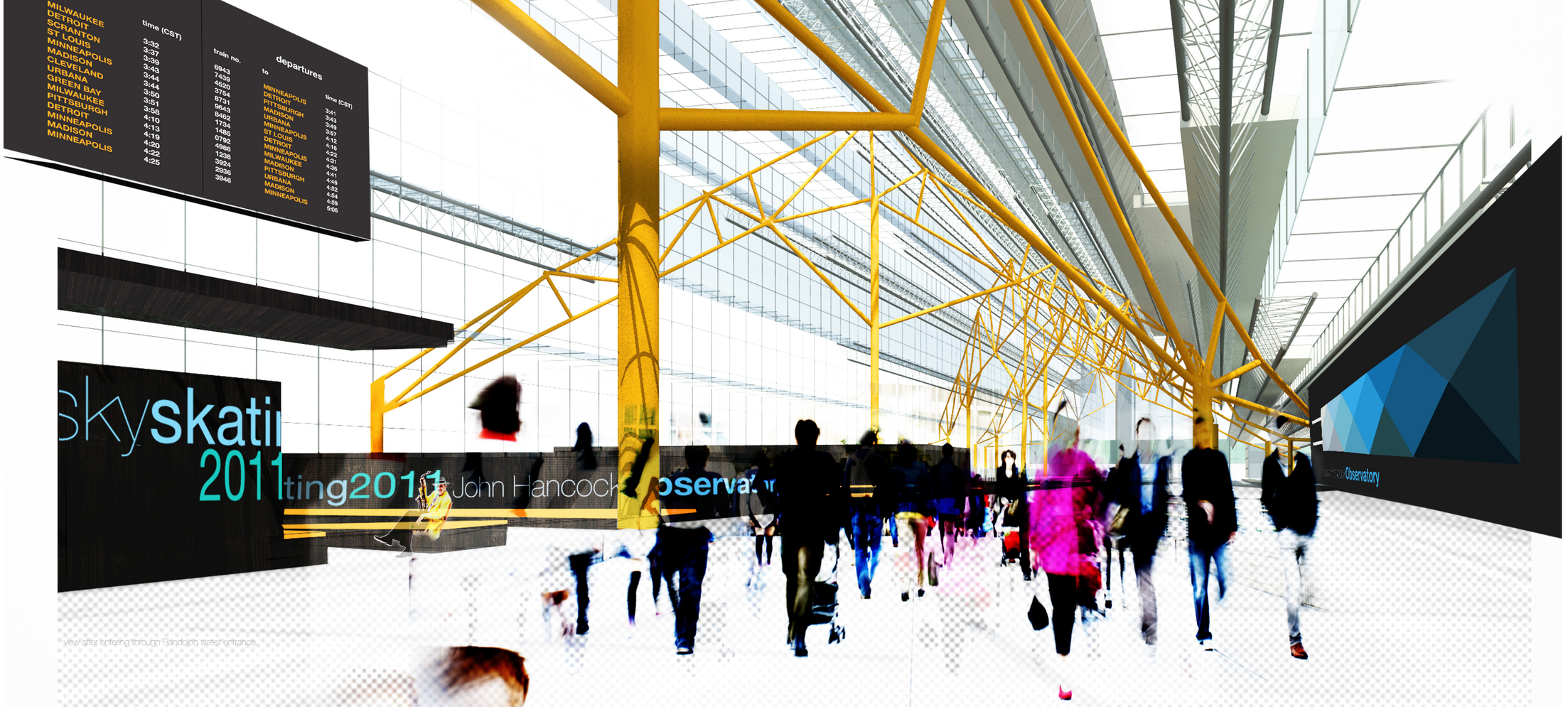


350ft

roof level cascading park plan

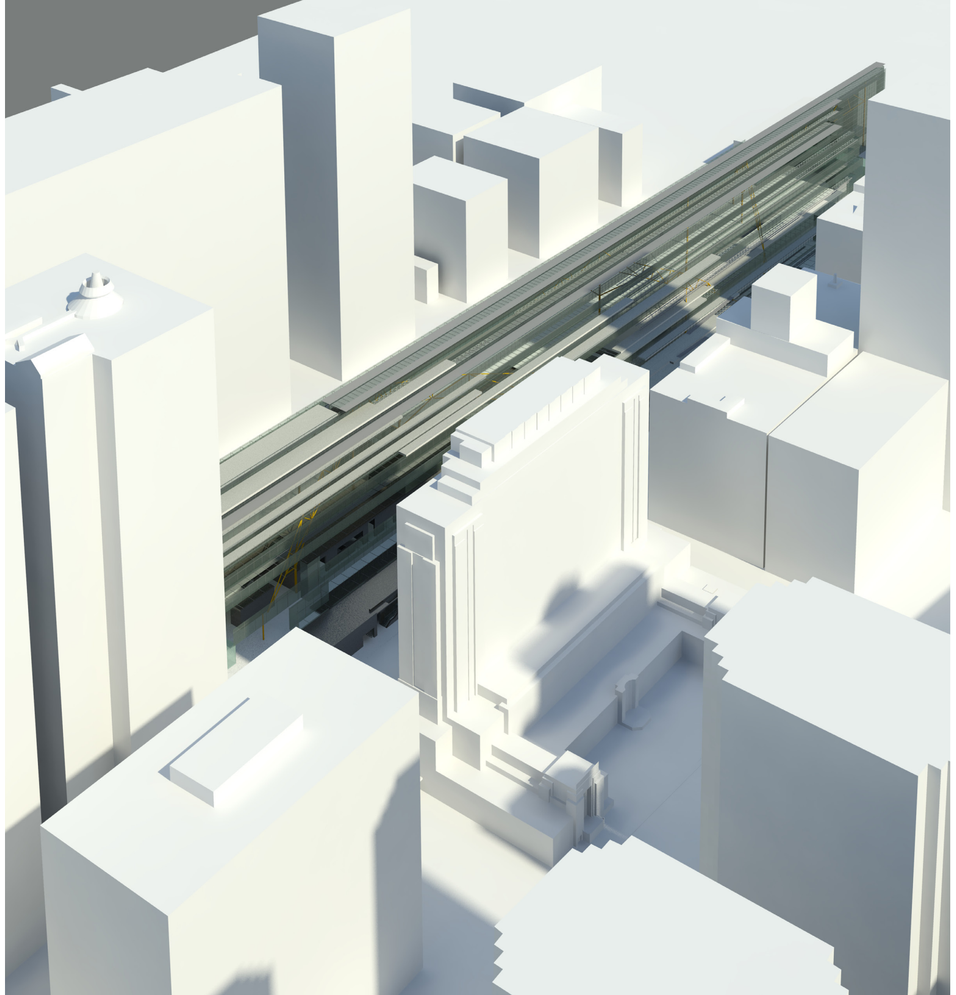


view from approaching commuter rail trains



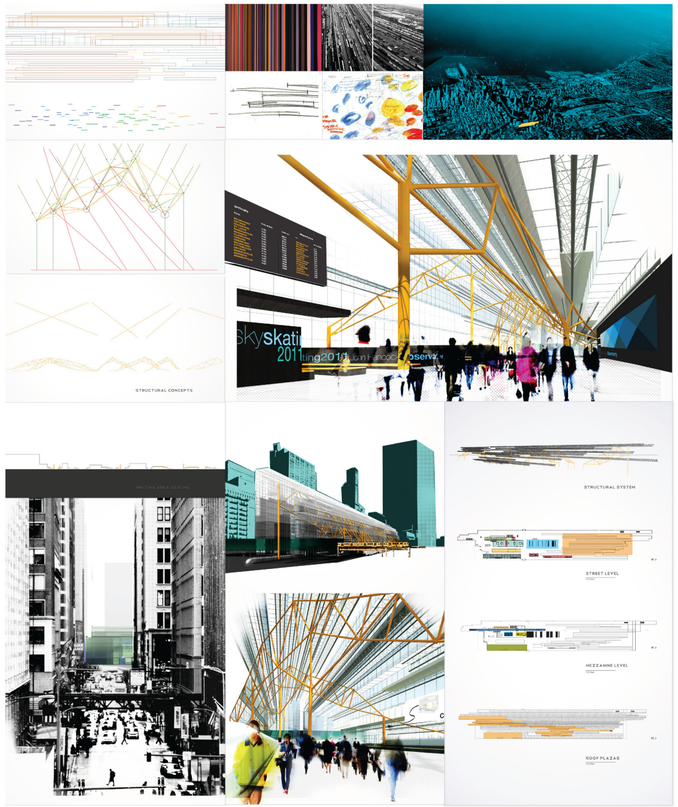
view after entering through Randolph street entrance

view on train platforms



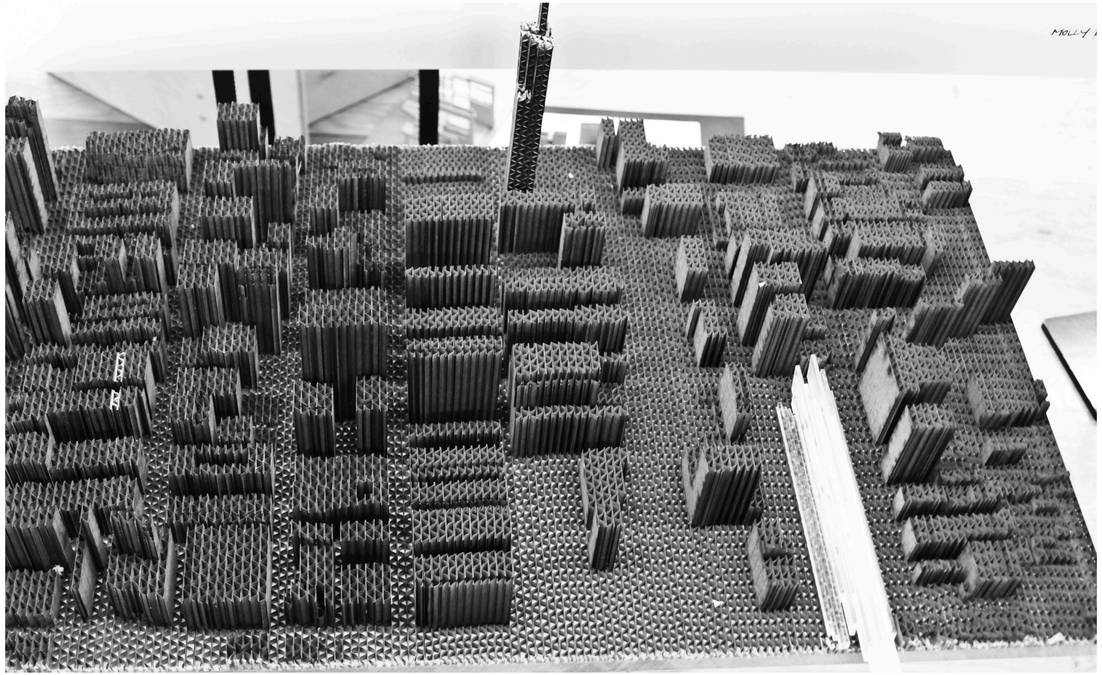
delight in architecture
rail transit hub
chicago, il

what enables a building to incite delight, excitement, and curiosity even after an individuals familiarity with the building has been established?

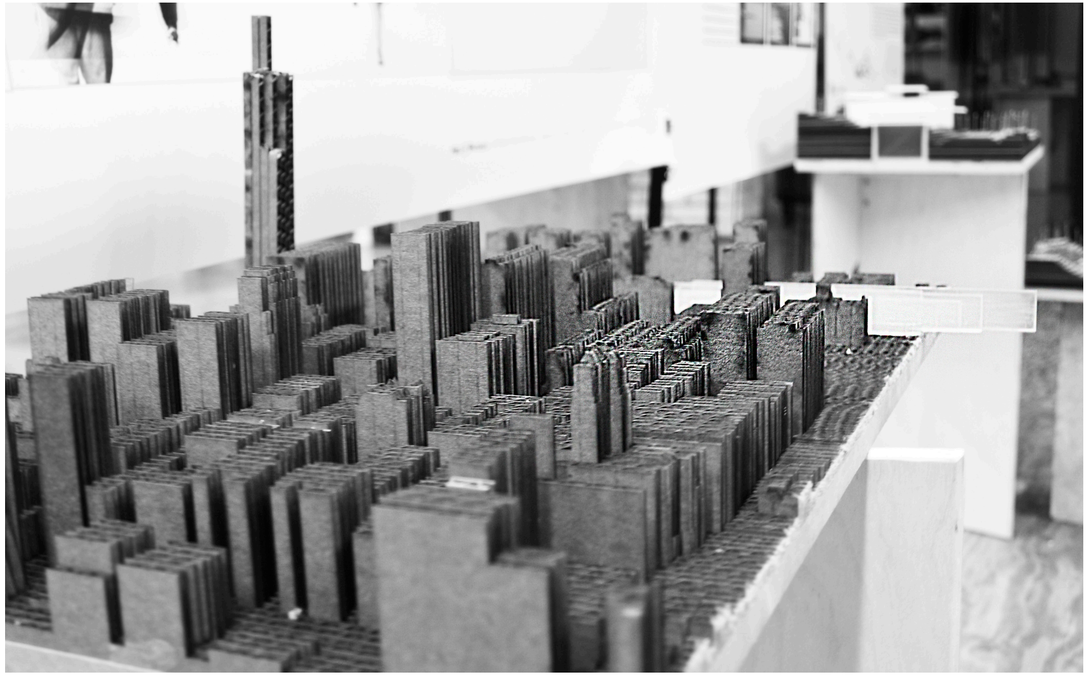


board layout

professor mark bernhowe · spring 2011 · sketchup · autocad · revit · 3ds max · photoshop · illustrator · indesign



model view 1



model view 2

studio experience

2007-08

Fall Semester
Professor Mike Christenson
Teahouse
Boathouse
Infill Office

Spring Semester
Professor Stephen Wischer
Threshold Yoga Loft
Vertrauen House

2008-09

Fall Semester
Professor Steve Martens
Interpretive Center for the American Bison
Masonic Lodge

Spring Semester
Professor David Crutchfield
Austin Performing Arts Center
Hotel for Spaceport America

2009-10

Fall Semester
Professor Darryl Booker
444 Folsom High Rise

Spring Semester
Professors Darryl Booker, Paul Gleye, and Frank Kratky
Santo Domingo Proactive Design-Build

2010

Fall Semester
Professor Mark Barnhouse
Water Research Facility

Spring Semester
Professor Mark Barnhouse
Delight in Architecture

references

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Appraisal Research Counselors, Claritas, Costar, CTA and Metra. Metra Demographics. http://www.metramarket.com/demographics.htm. Retrieved 5 Oct.

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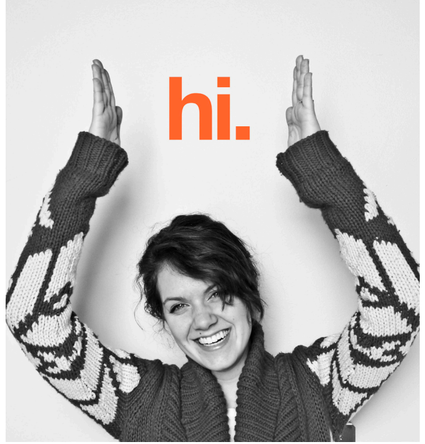

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